THE AUTOMOBILE

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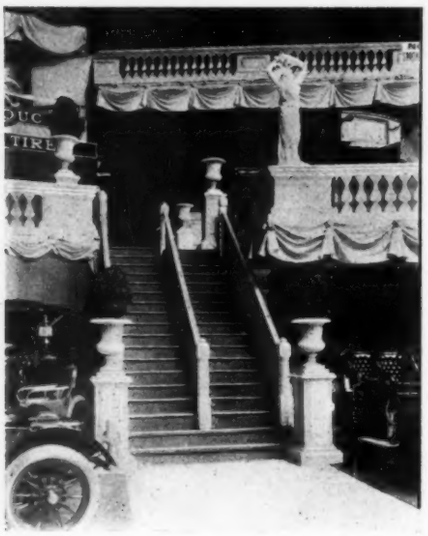
American Industry Challenges World: A.L.A.M. Show Convincingly Astounds

THE A. L. A. M. show is a distinct, comprehensive, and overwhelming triumph of the American manufacturers of automobiles, challenging in unmistakable manner unbiased and equal comparison with the product of the leading European makers, who possessed advantages gained through being first in the field by several years. The exhibition in Madison Square Garden, which opened expectantly on Saturday night, November 2, and will close brilliantly on Saturday evening next, is a revelation even to those who have followed the industry from its earliest stages and watched the gradual development and betterment of automobiles in this country. While one might be inclined to question the continued extraordinary demand—a steady demand is assured—for the output of such a substantial number of concerns bidding principally for *de luxe* patronage, he must realize that the highest types of cars are now available, American-made, to those who can afford these luxurious vehicles with gorgeously finished bodies and sturdy, reliable motors, capable of long journeys, the climbing of mountains, and progress over roads not deserving of the name.

And all of this in less than a decade!

Of course, there will always be those who prefer to buy something from abroad, and, while admitting the excellence of European cars, one fails to comprehend why the patriotic and discerning American should longer select his high-priced automobile on the other side of the



HOW THE STAIRWAYS WERE DIVIDED.

salt pond when he can do equally well in quality, and much better from a financial point of view, by buying at home.

Once upon a time a couple of makes stood out prominently, and while their owners still swear by them it is possible to pick any one of a score and more of American cars and obtain a commensurate return for the money invested. The popular priced car does not have much of an innings in the Garden, and, while there is provision for the man of moderate means, the bulk of the show is devoted to those who want the very best and are willing to pay for it. In fact, it is a display of highest-grade automobiles, and one which will astound even the man who in the past could see nothing worth having except an imported vehicle.

Of course, the American makers are proud of what they are presenting in the big Garden, and they have good reason for feeling elated and confident and satisfied, for their 1908 models will meet the wishes of the most fastidious.

It may be that the recent flurry in Wall street, instead of curing the broker of his automobile habits—something well nigh impossible after he has become wedded to the use of a car—has caused him to figure a little more economically, which means that 45 per cent. duty is an item which he has in mind to blue-pencil. Advising him to take a look at the Garden array is an act for which he is likely to feel grateful, in view of the financial bumps over which many have traveled recently with deflated tires and benumbed shock absorbers.

To the double music of the sonorous telharmonium and the more flexible tones of the Garden band, the thousands have noted that the licensed cars have been not only embellished exteriorly, but inwardly the vital parts have been perfected in vast degree until any amount of mileage is available with sane use and care, for even engines of automobiles require looking after like any other piece of machinery, and that which the automobile accomplishes nowadays often approaches the phenomenal.

In all the 39 different makes of pleasure cars, 9 of pleasure electrics, 12 of commercial vehicles, and 14 of motorcycles, which go to make up the show as a whole, there is entirely lacking the element of freak design once so prominent. And what is even more noticeable is the high standard of finish and equipment represented by the bodies of the cars, as well as their uniformly excellent design, patterned after the straight-line type.

Though the show is, in the main, one of high-grade cars representing the most advanced degree of the builders' skill and listing at correspondingly high prices, there is much to attract those whose interest is most keen in the lesser priced vehicle, and the range of prices is very wide indeed. Beginning with the small twin-cylinder, air-cooled and friction-driven Waltham at $600 in the runabout class, the single-cylinder Cadillac at $850, and the new Buick four-cylinder runabout at the same price, which is attracting such an unusual amount of attention, it is but a step to the $1,000 to $2,000 class of touring cars, which are represented by no less than five examples, of which several have all the attributes of many of the higher-priced cars in the shape of four-cylinder vertical engines, sliding change-speed gears, long wheelbase and large tires.

M. J. BUDLONG ELECTED A. L. A. M. MANAGER.

Thirty of the thirty-one members of the Association of Licensed Automobile Manufacturers attended the annual meeting, held Wednesday afternoon, at the association headquarters, and elected Milton J. Budlong as general manager, to succeed E. H. Cutler, who found it impossible to continue in office because of his recently increased duties as president of the Knox Automobile Company, of Springfield, Mass. Charles Clifton was re-elected president; H. H. Franklin, as treasurer; and L. H. Kittridge, as secretary. Thomas Henderson was selected as first vice-president, taking the place of F. L. Smith on the executive committee, which will also include Charles Clifton, W. E. Metzger, S. T. Davis, Jr., and George H. Day. Mr. Smith asked to be relieved, owing to his inability to give time from his duties as head of the Oldsmobile Company to attend the meetings in New York City.

Mr. Budlong, who recently retired from the presidency of the Electric Vehicle Company, is a well-known figure in the automobile industry, personally popular, and possesses well proven executive ability. His selection is commented upon most favorably.

Mr. Cutler, in retiring, made a few brief remarks, in the course of which he thanked the members for their hearty co-operation and support extended him during his term of office, and commended Mr. Budlong as a capable successor.

MOTOR AND ACCESSORY MFRS. ELECT DIRECTORS.

Some sixty members attended the annual meeting of the Motor and Accessory Manufacturers, held at the Hotel Astor, Wednesday morning. The president's report showed since the formation in Cleveland, February 11, 1904, a steady increase in membership. In 1904 there were 94 members; 1905, 130 members; 1906, 173 members; and at the present time, 192 members. The treasurer's report indicated an ample balance in the treasury.

These were the directors elected to serve for three years: W. S. Gorton, Standard Welding Co.; H. S. White, Shelby Steel Tube Co.; P. S. Steenstrup, Hyatt Roller Bearing Co.; H. E. Raymond, B. F. Goodrich Co.

Elected to serve for two years: C. E. Whitney, Whitney Mfg. Co.; D. J. Post, Veeder Mfg. Co.; C. T. Byrne, Byrne, Kingston & Co.; H. W. Chapin, Brown-Lipe Co.

Elected to serve for one year: E. S. Fretz, Light Mfg. & Foundry Co.; H. T. Dunn, Fisk Rubber Co.; F. E. Castle, Gray & Davis; L. M. Wainwright, Diamond Chain & Mfg. Co.

Following the adjournment to the annual meeting, the board of directors met and organized by electing the following officers: President, H. S. White; first vice-president, H. E. Raymond; second vice-president, H. T. Dunn; third vice-president, F. E. Castle; treasurer, W. S. Gorton; secretary, Peter S. Steenstrup.

A sanction was granted to the Philadelphia Automobile Trade Association for a show, to be held in Philadelphia next week.

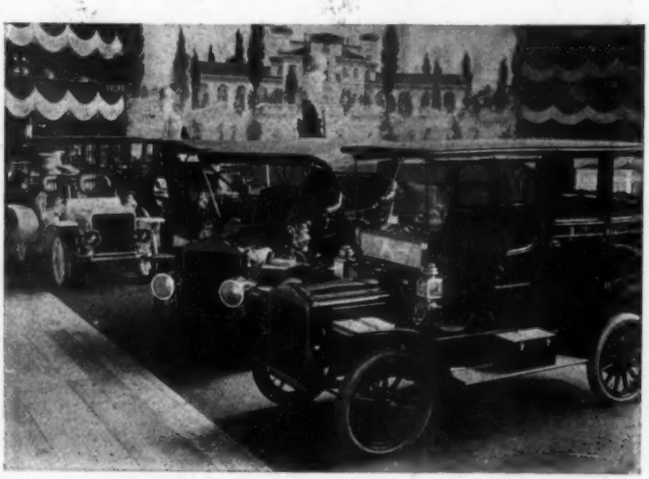
TAKING IN THE CARS AT THE GARDEN'S REAR ENTRANCE.

LONG before the manufacture of automobiles in this country had arrived at a stage where its importance was sufficient to dignify it by the title of industry, those far-seeing makers who were then pinning their faith to the future of the new method of transportation realized the need of co-operative effort if the many obstacles that then confronted them were to be successfully met and overcome. They fully realized that, in addition to the task of evolving the perfect automobile, and that time is but a very few years back, there were so many other things to be accomplished that no single maker could possibly attempt to cope with them all. The result was the formation of the Association of Licensed Automobile Manufacturers, more familiarly known as the Licensed Association and the "Selden interests."

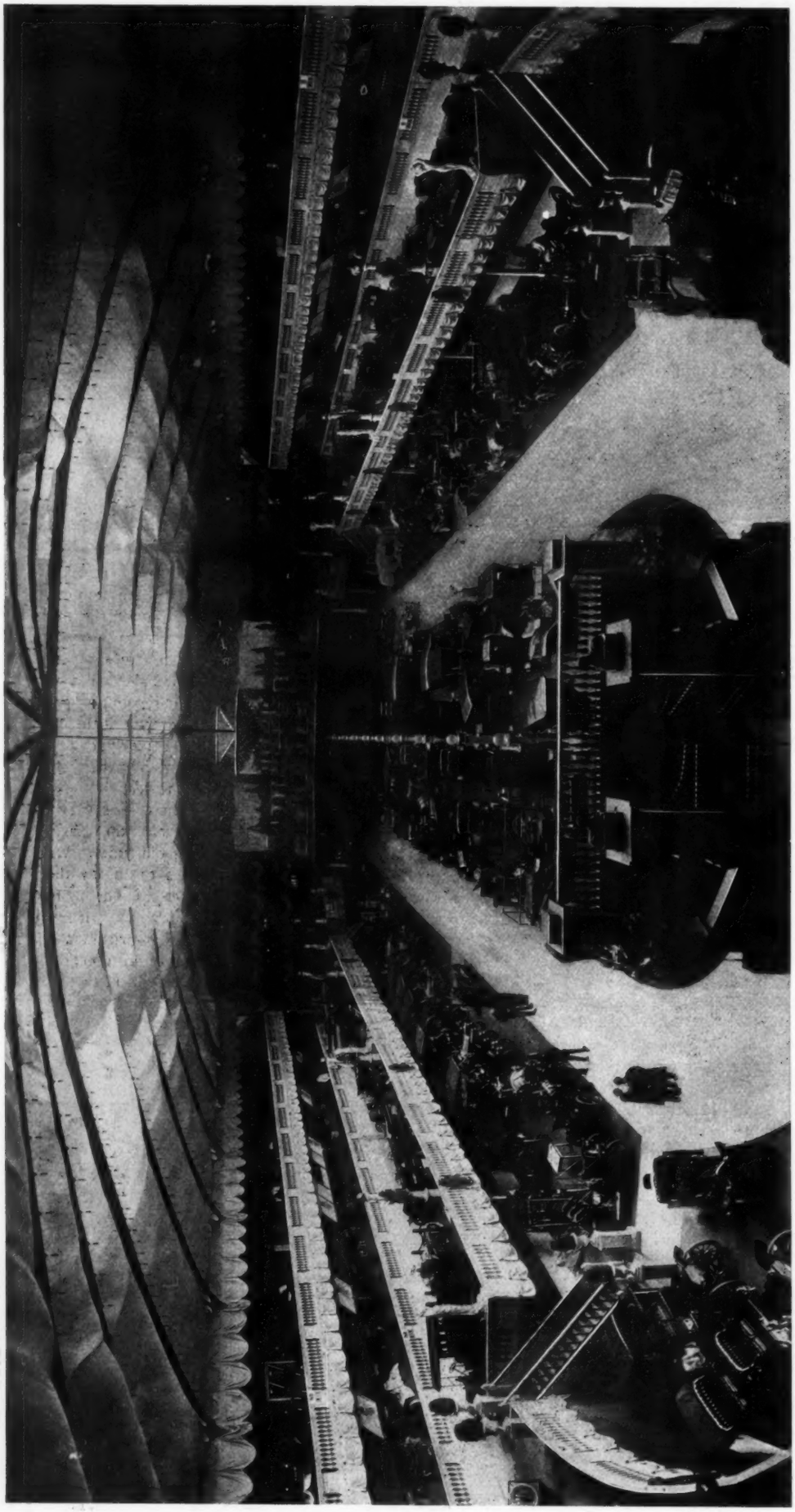
When first the manufacturers who go to make up the membership of this association came together they practically represented what was the nucleus of the entire American automobile industry of to-day, but their combined product formed as motley an array of self-moving vehicles, termed automobiles, as can only be found within the four walls of a museum at the present writing. Development has been so rapid, and yet so solid and permanent, that it is hardly conceivable, even to those who have been most closely identified with the automobile movement during that time, that the result as now spread forth in the Garden can be the work of but three or four years. It positively seems years ago that the outlandish and lumbering productions of 1903 and 1904 were gazed upon with rapture and no little patriotic pride at the self-same spaces that many of them now occupy, as being representative of the highest ideals of American automobile construction. Think for a moment of the Winton of those days and compare its two tremendous horizontal cylinders that completely filled the chassis frame from side to side, and almost from end to end, with the graceful and perfected six-cylinder construction of the same car which to-day is being exhibited within less than fifty feet of where it was accustomed to hold forth in earlier times.

What of the little one-lungers with the curved dash that made the name Oldsmobile a byword the world over? It is not hard to picture the array of them that formerly filled the exhibit of this concern and which held the attention of a very large part of the entire attendance during show week, for they were the first examples of the popular-priced automobile. But it is next to impossible to reconcile the idea of the exquisite Packard creation, which now tenants almost the same space that it has held forth at for years, with the tremendous single-cylindered affair that did duty as its predecessor at the same stand. It represents a process of evolution that would puzzle a Darwin. Then there was the Stearns, which had less engine in more space, and more parts than were impossible to get at without the aid of a pit than could be found on a season's output of the same make of cars to-day. At that time the Elmore was a wire-wheeler perched aloft on a sort of hermaphrodite running-gear, with its power plant of the two-cylinder type somewhat in the position of Mahomet's coffin, suspended in an inverted position underneath the seat.

Wherever one looks around the Garden there are the old familiar names and the familiar faces that make the Garden show somewhat akin to a family reunion to the old-timer. Who would recognize in the Thomas or the Haynes of to-day their horizontal-engined, short-wheelbased prototypes of but a few short years ago had he not been able to follow the different steps of development that have taken place in the interim? Then there was the Pierce "Motorette" and its bigger brother of a year or so later, the Pierce "Stanhope"—cars which had the cardinal virtue of being able to run in high degree, but the former of which, at least, reminded one more of a gattling gun. From those models to the Pierce "Great Arrow" and the Pierce "Big" and "Litt'e" sixes is a far cry indeed.



WHITE STEAM CARS WERE WELL AND EFFECTIVELY PLACED.

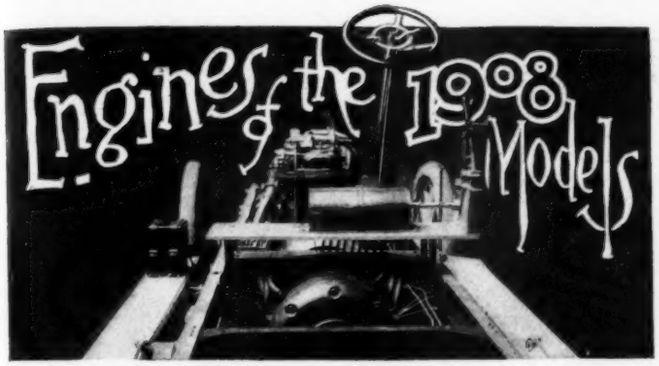


But even more so is a comparison of the one and two-lunger Knoxes and their ponderous parts with those of their refined successors that bear about as much resemblance to their honored forbears as an ice wagon does to a racing sulky. And so it goes down through the list; Franklin air-cooling is still the same air-cooling of those days, but the refinement accomplished seems like the work of a dozen years.

Here are still the same numerous representatives of the Pope family, and it will be remembered that the Pope cars were among the very first to adopt forms of construction that are now recognized as standard, such as the four-cylinder vertical motor placed forward under the bonnet. The early annals of American automobile racing are inseparable from the Peerless, and its rapid development to a state of perfection recalls the service rendered the industry in its infancy by the racing game. No matter what part of the Garden the visitor finds himself in he sees cars that have graced the same or neighboring spaces ever since the great arena has housed the automobile show. The Locomobile, which in the early days had to live down the name borne by its ill-fated predecessor of the tea-kettle type of steamer; the Cadillac, first, last and all the time, the undying advocate of single-cylinder economy and simplicity; the Northern, Lozier and Matheson, all of which took part in the early struggle toward the goal.

In this connection the show houses one of the most notable examples of well-directed and persevering effort that any industry can boast of—that of the White. When steam was practically down and out, to revert to current slang, the builders of the White maintained their faith in it and through their determination and skill have shown that it is far more applicable to the automobile than its first users ever dreamed of. The result, as shown by their exhibit, is a monument to the name.

Taken all in all, the show is representative of the acme of the American automobile industry, and one cannot fail to be struck by the reflection: Why should an American think of buying a foreign-made car?



POWER-PLANT AND ELECTRIC TRANSMISSION OF THE COLUMBIA.

By CHARLES B. HAYWARD.

IT only requires a little observation and study to show, despite the fact that a high degree of standardization has been approached by American automobile builders, that all motors are not alike by any means. They differ, not alone where details are concerned, but even with regard to many features that must be considered as of greater importance than merely a change of arrangement. The latter essential is capable of so many changes that it is quite evident there are a great many ways of accomplishing the same end where the internal combustion motor is concerned.

To begin with there is more diversity of opinion apparent now regarding the matter of cylinder casting than there was two or three years ago, when it was confidently predicted by the advocates of one method or the other that their school would predominate in the near future. Those who were advocates of one type or another at that time have remained loyal to their convictions, so that there are just as many instances of cylinders cast in pairs and cast separately as there have been. The same thing is true of the various methods of valve placing and operation. The practice of making a one-piece casting of the four cylinders has found a new recruit in the Thomas town car, though this is a special design that embodies numerous other features of merit, placing it practically in a class by itself.

Newcomers to the ranks of the cast-in-pairs advocates are to be found in the Selden; other prominent instances of this being Locomobile, Royal Tourist, Lozier, Peerless, Columbia, Winton, Oldsmobile, Stearns, Thomas Detroit, Pope-Toledo, Studebaker, Packard and Haynes light cars, while those upholding the plan of casting the cylinders individually are to be found in Pierce, Haynes, Apperson, Franklin, Corbin, Knox, Thomas Flyer, Cadillac, Stevens-Duryea, Autocar, Matheson, and Elmore, the latter making as short a motor with independently cast cylinders as the average four-cycle type with twin castings. The Northern and the Waltham display the only instances of the two-cylinder horizontal type to be found in the show, though they differ in all other respects.

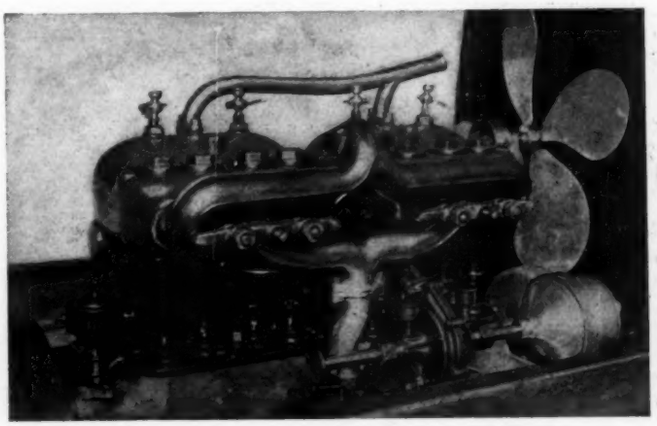
Some New Motors at the Show.

It might be thought, owing to the membership of the exhibiting association being limited and designs as a whole having reached a very marked degree of standardization, that there would seldom be any really new motors to chronicle at the annual shows. Naturally, new in this connection must be regarded as indicating more the fact that the makers of the motors are newcomers in the market rather than that the designs are particularly novel, but even this finds one or two striking exceptions, such as the Franklin air-cooled motor and the new Knox water-cooled motor, a complete description of which appears elsewhere in this issue. While still adhering to those standards of design long familiar on the Franklin motor, the latter has been practically redesigned and with its spherical combustion chambers and concentric valves, the arrangement of which has been very cleverly worked out, it embodies a great many features of interest to the technically minded visitor with an eye to what is new in the way of motor design and construction.

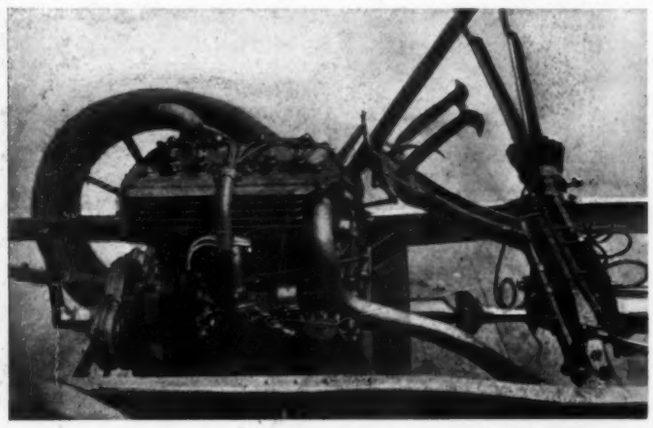
This also applies to the new water-cooled Knox motor, in that the latter is among the first, if not actually a pioneer, in the readoption of a principle long utilized in the building of stationary gas engines—that of making the cylinder heads separable. The design is of unusual interest, as by careful study the disadvantages which caused this form of construction to be abandoned at the outset in the building of automobile motors have been completely overcome and all the advantages it affords gained.

The Corbin water-cooled motor is another newcomer that is of interest, and the first thing about it to strike the observant eye is the peculiar shape of the lower half of the crankcase or oil pan, which has been designed to act as a shield for the flywheel in the rear and has been extended forward sufficiently to protect the fan pulley and timing gears from below. The cylinders are separately cast units with the valves placed all on the left-hand side and operated by the direct thrust method from a single camshaft. The oil and water pumps are also on this side and are actuated by a separate shaft driven through spur gearing from the camshaft, while the inlet manifold is carried between the central pair of cylinders and the carbureter located on the other side of the motor. The outlet from the gear-driven centrifugal pump is also carried between the cylinders to the opposite side. Both inlet and exhaust manifolds are held in place by the same yokes, making them easy to dismount. Particular attention has been paid to accessibility, unusually large hand holes being provided in the sides of the crankcase—in fact, this is practically all open when the plates have been removed.

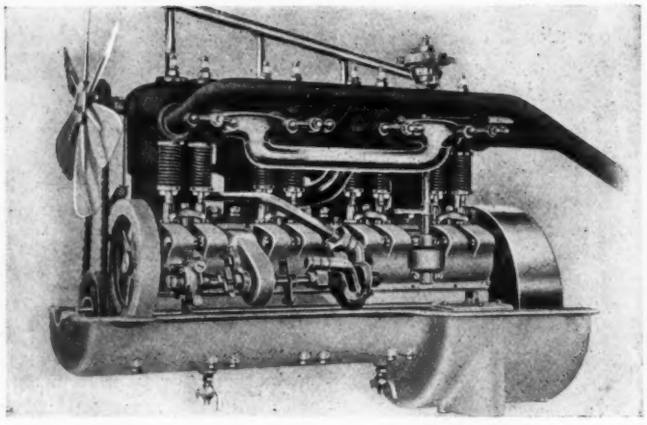
The new Lozier four-cylinder motor has a combined pan



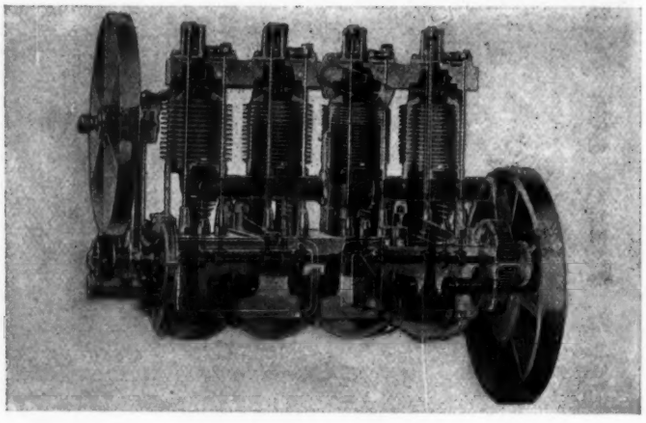
WORKING SIDE OF THE NEW 25-HORSEPOWER SELDEN MOTOR.



MERITORIOUS FEATURES OF THE THOMAS TOWN CAR MOTOR.



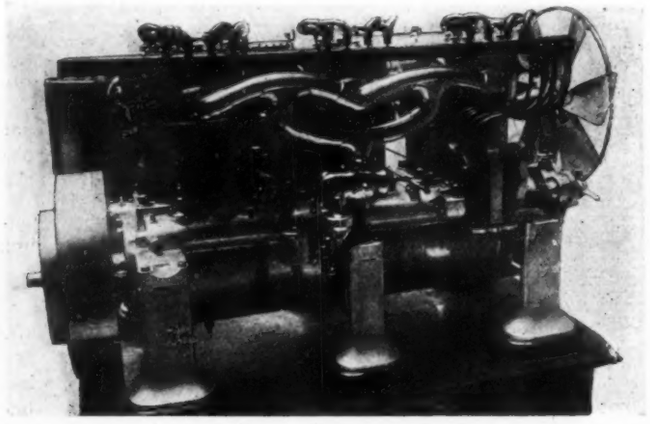
FEATURES OF THE NEW CORBIN WATER-COOLED MOTOR.



SHADOWGRAPH OF THE NEW FRANKLIN AIR-COOLED MOTOR.

and crankcase which represents an extremely creditable example of aluminum casting.

With the exception of the fact that the cylinders are cast in pairs, much of the foregoing description may be said to apply to the new four-cylinder Selden motor, which is shown in two sizes, a 4 1-4 by 4 1-2-inch, rated at 28 horsepower,



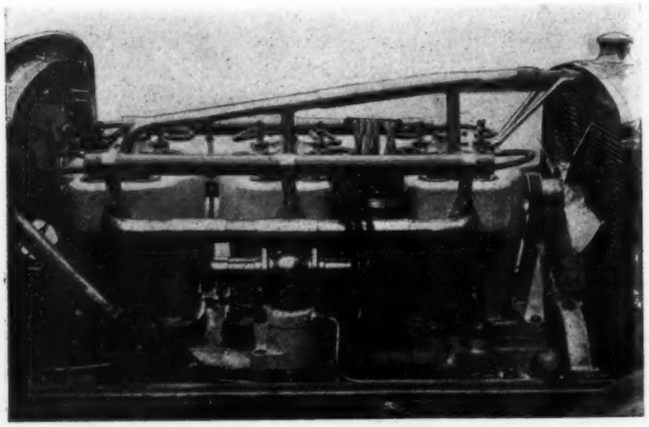
THE HIGH-POWERED SIX-CYLINDER PEERLESS WITH DUAL IGNITION.

and a 5 1-4 by 6-inch motor, rated at 45 horsepower under the recently adopted formula. The centrifugal pump and magneto are both driven from an independent shaft on the right-hand side of the motor, which is also the valve side. On the smaller motor a mount is provided for a magneto, but on the latter the generator itself forms a regular part of the equipment. The low-tension timer is mounted vertically on a short shaft located at the rear of the motor and driven from the end of the camshaft. The exhaust manifold is given a slight upward bend, and the outlet, which is located in the center, faces toward the motor, the connection to the muffler being carried across and down.

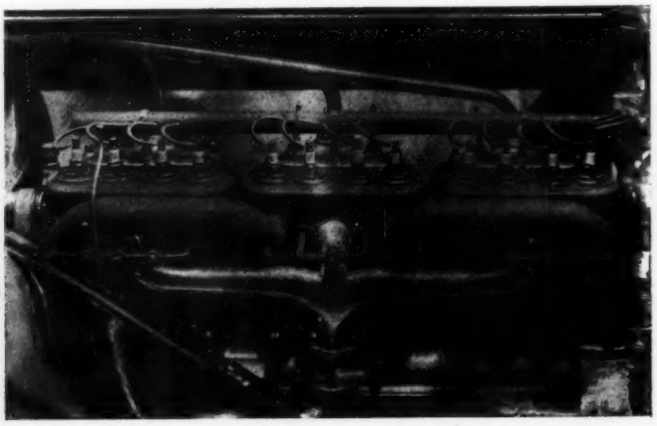
Compactness Guiding Star of Designer.

It is when he comes to consider the power plant of the new Thomas town-car that the observer finds a great deal of food for reflection. It is quite evident that compactness has been the guiding star of the designer throughout, and that this has been amply achieved is apparent at a glance, as its 20-horsepower motor could almost be carried off under one's arm. The cylinders are cast as a single unit, and the most noticeable thing about this construction is the fact that the exhaust manifold has been made an integral part of the motor. It is also provided with cooling flanges.

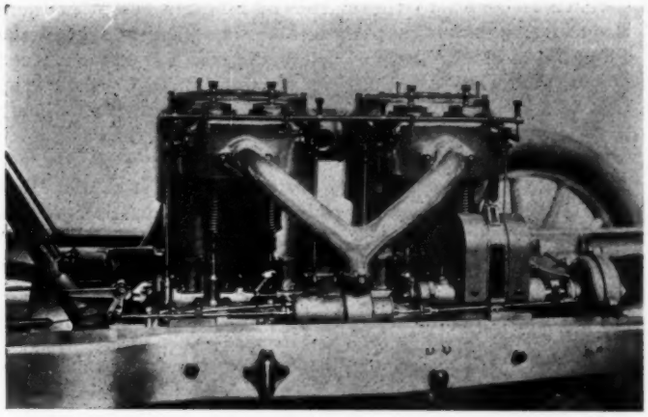
To one familiar with foreign practice, it is plain that there has been little attempt at originality, but that the designer has culled the best from a number of standard French designs and embodied the results in this motor. For instance, it is easy to recognize the Renault type of flywheel, the C. G. V. single-piece casting, the Brasier combined tank and radiator, Renault type of thermo-syphon circulation, and the latter is a particularly noticeable feature which adds materially to the neat appearance of the motor as a whole, as there is no water-piping in evidence, with the exception of the radiator connections, while all the wiring is encased except right at the plugs, and the magneto can be lifted off for inspection, merely by loosening a thumb-screw. The motor as a whole is carried on a sort of oscillating three-point suspension, which has been very ingeniously worked out, and carried to a successful result.



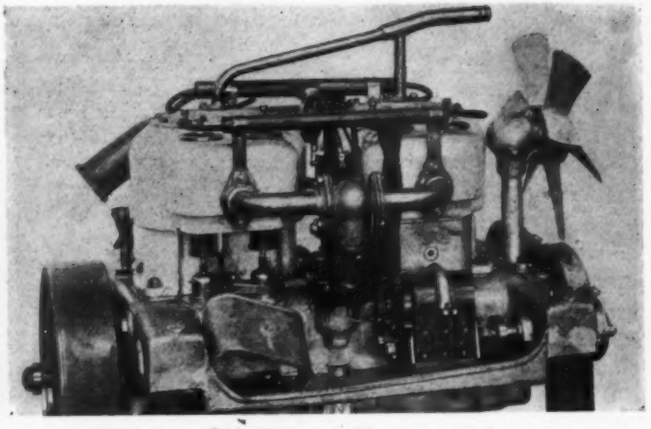
SIMPLICITY OF THE INLET MANIFOLD OF THE NEW LOZIER "SIX."



DEVELOPMENT OF THE OLDSMOBILE "SINGLE" OF FORMER DAYS



LOCOMOBILE MAGNETO, CARBURETER AND CIRCULATING PUMP

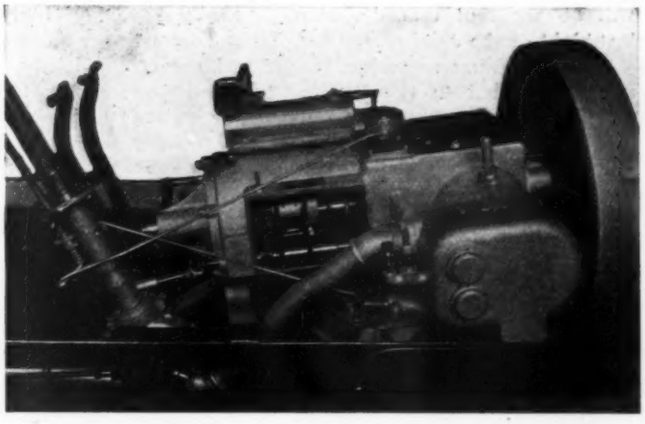


SHOWING THE LOZIER CRANKCASE CASTING AND VALVE COVERS.

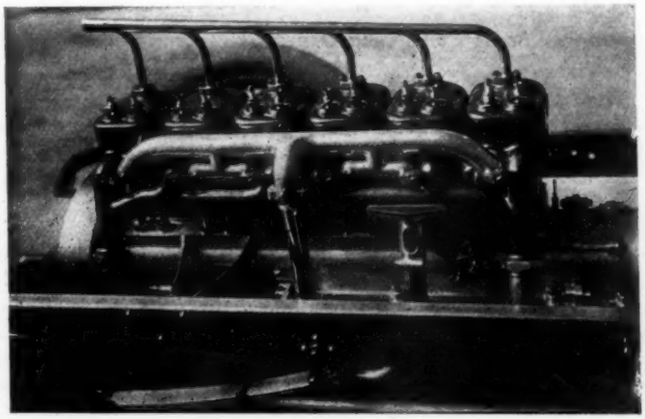
That there are not a great many novel features to be looked for in the new sixes is not difficult to learn, for, except in such cases as have the subject of special design, the majority of the six-cylinder motors do not differ greatly from the fours turned out by the same makers. Though so much has been said and written of the six-cylinder motor as being something quite new during the past season, it only requires a moment's reflection to recall the fact that this is far from being the case. There have been six-cylinder racing cars for three years past and six-cylinder stock cars for fully two years past, one maker alone claiming to have several hundred of them on the road. The Stevens-Duryea "Big Six" dates back to the 1905 shows, and the Pierce Arrow to the 1906 A. A. A. tour, while the Thomas six-cylinder racing car was one of the first of its kind to be seen in this country, and the Franklin air-cooled six has been a stock car for two seasons. So it seems the six is not an extreme novelty by any means, but the increased demand for this type of motor is reflected in the increased number shown at the Garden, among which such newcomers as the Pierce "Little Six" and the Winton "Sixteen Six" are of special design, the latter being the sole representative of the Winton line, which this year is confined to this type of car.

But, as a general rule, designers have adhered closely to the standards represented by their productions of the four-cylinder type in evolving the six-cylinder motor—so much so as to lead one to the conclusion, as has been frequently overheard at the Garden, that "it is merely a case of sticking on another pair." For instance, the Peerless six-cylinder motor is characterized by cylinders cast in pairs, oppositely disposed valves actuated by the direct thrust method from separate camshafts and other features that have long been identified with Peerless construction. In the same manner the new Thomas six-cylinder has separately cast cylinders, which is also true of the Pierce "Little Six," while the new Stearns six is true to its four-cylinder prototype.

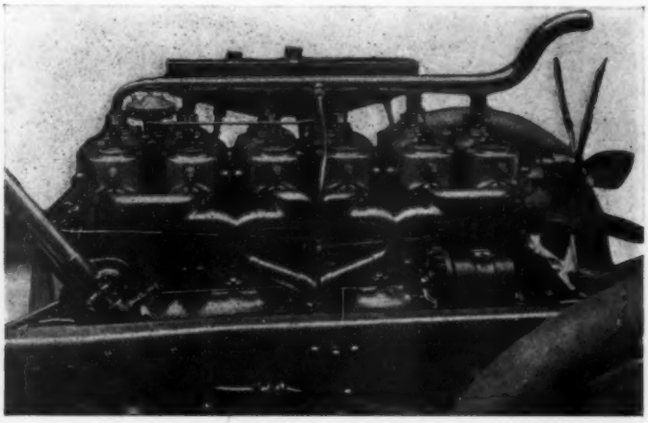
This practice of merely adding another pair of cylinders to the existing type of motor, which many of the makers have found it expedient to adopt as the easiest and most economical method of bringing out a six-cylinder model, has naturally led to the production of unusually powerful cars, despite their extremely conservative official ratings, which are very misleading—or at least they would be if any of the salesmen at the exhibits were content to have the visitor depart with the impression that the official and the actual rating were one and the same thing.



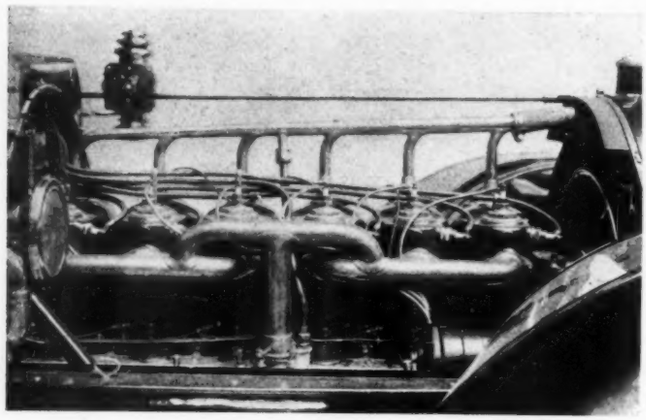
COMBINED POWER-PLANT AND SPEED GEAR OF THE NORTHERN



THREE-POINT SUSPENSION OF THE STEVENS-DURYEA "LITTLE" SIX.



EQUALIZED INLET MANIFOLD OF THE NEW PIERCE SIX-CYLINDER

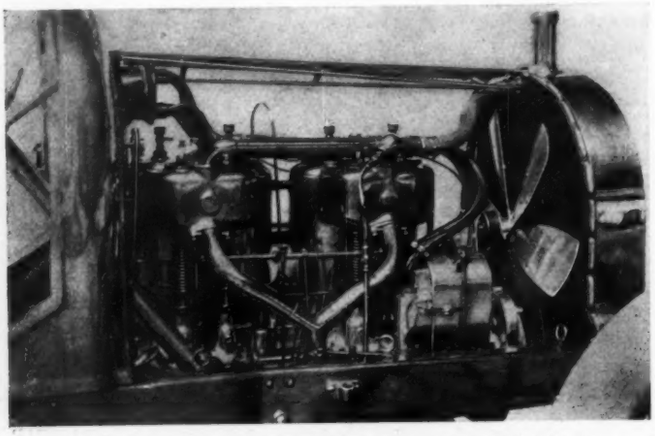


LOW-HUNG POWER-PLANT OF THE NEW THOMAS SIX-CYLINDER.

For instance, the new Stearns six, which is admittedly a replica of the well-known four of this make, with the addition of an extra pair of cylinders, was rated by the makers at 90 horsepower when first brought out, and its cylinder dimensions of 5 3-8 by 5 7-8 inches amply justify this, though its A. L. A. M. rating is but 69.3 horsepower. The Peerless 5 7-8 by 5 1-2-inch six-cylinder is rated at 57 horsepower, evidently an error, and the Thomas at 72.6, from which it will be apparent that designers generally have seemingly lost sight of the chief reason for building six-cylinder motors —that of gaining smoother torque and greater flexibility— and have taken to the building of ponderous motors for which there can naturally only be a limited demand at the best. It is in these examples of excessive weight and power, which mean correspondingly high tire and fuel expense, that the advocate of the four-cylinder type finds his best argument against the practice of adding another couple to the present standard, which has certainly been brought to a high degree of efficiency and smooth running.

Sixes Are Larger and Very Powerful.

If the six-cylinder is to be the coming type that will ultimately sweep all before it, as some of its most ardent advocates are now of the opinion, such cars as the Stevens-Duryea and the Pierce "Little" Sixes represent steps in the right direction. That six-cylinder cars of 70 to 90 horsepower, or any other design of such high power, do not represent an ultimate standard is a statement that calls for no refutation, and the fact that makers will only build limited numbers of such cars shows that they are of the same opinion. It is merely a case of taking advantage of a demand that is making itself felt at the moment. Firms like the builders of the Packard, Cadillac, Columbia, Matheson, Knox, Corbin, Autocar and some others have remained steadfast to their allegiance to the four-cylinder type.



FAMILIAR LINES OF THE ROYAL-TOURIST MOTOR FOR 1908.

When it comes to the matter of motor accessories there is one trend that is very noticeable, and that is toward the adoption of the magneto. In fact, from a much maligned object, the value of which was very slightingly regarded by the American maker but a very few years ago, the magneto has come to be a standard feature of motor equipment to such an extent that it is not lacking on any but the lowest-priced cars, and there merely owing to the fact that the list price of the car does not permit of its inclusion, though it is almost invariably offered as an extra, and motor design has been modified to facilitate its fitting in practically every instance. One exception to this is to be found in the case of the two-cycle Elmore, on which the Atwater-Kent ignition apparatus used in connection with dry cells as the source of current, has been adopted as the regular equipment.

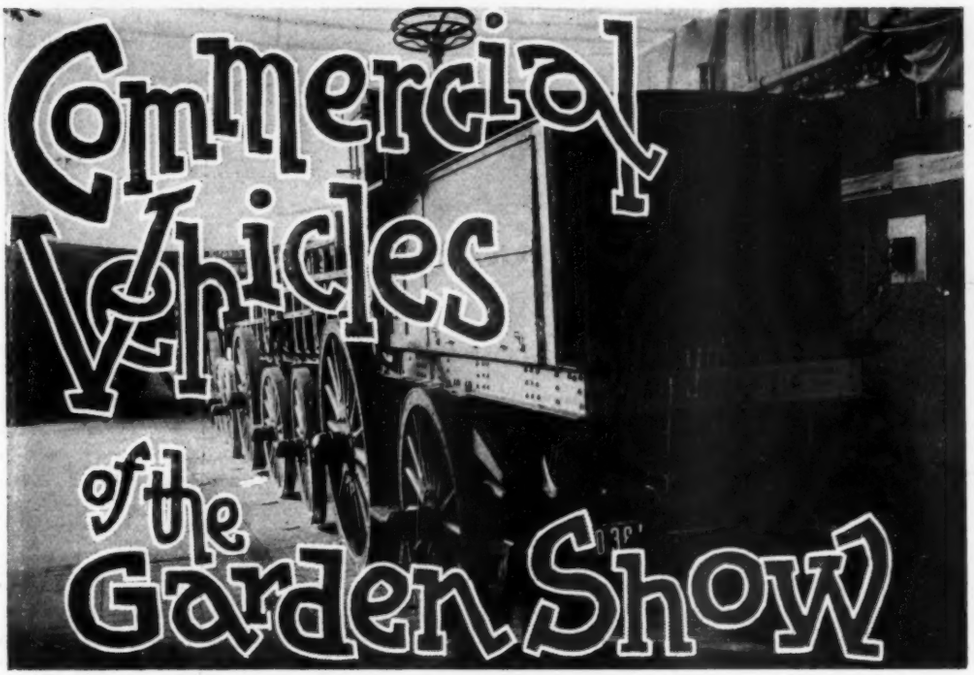
Where this essential is concerned, technical opinion appears to be pretty well divided regarding the merits of the self-contained type of high-tension magneto, such as the Bosch, and the high-tension with coil type, such as the Eisemann, though in at least one instance the latter is fitted as a regular part of the equipment and the purchaser is given an option of the Bosch where preferred, this being on the Pope-Toledo. Low-tension ignition can hardly be said to have made any perceptible inroads into the ranks of those advocating the high-tension type, as such cars as the Locomobile, employing its own type of magneto, the Matheson, Studebaker and Columbia are still the most prominent upholders of make-and-break ignition.

Where the carbureter is concerned, the chief change to be noticed is in the adoption of the Venturi tube type of Holley make on the Winton, and the adoption of a water-jacketed type in connection with a hydraulic governor on the new Lozier motor, similar to that used for three years past on the Packard and still consistently adhered to. There is another striking feature about carbureter practice, and that is that the average maker has come to the conclusion that he can buy a better carbureter than he can turn out in his own works, and, in consequence, a surprising number of the old line makers have given up producing this essential in their own factories and now purchase their carbureters complete, ready to be fitted to the cars. There is little or no change where the remaining motor accessories are considered, with the exception of the lubrication, in which there is a tendency manifest to reduce this to an extreme of simplicity, the oil being circulated by a pump and returned to a well, where it is filtered and again pumped through the system, thus eliminating the numerous small oil feeds which mean added complication. Either in this form, or something akin to it, are the lubricating systems of the Pierce, Packard and Lozier, all three being distinguished by their simplicity. Though not exactly an accessory, valve mechanism covers are a new adjunct and may be mentioned under this head; they are employed on the new Winton and Lozier motors.

Some Concluding General Observations.

While the past season has not been marked by defections from the ranks of advocates of air-cooling, those of water-cooling have gained two new partial recruits in the shape of the Corbin and the Knox, both of these motors, as already mentioned, being of considerable interest. A review of the entire show reveals but four different makers, if the motorcycles be omitted, namely: Franklin, Knox, Corbin and Waltham, although the latter are also showing a water-cooled car having a two-cylinder horizontal type of motor, which is merely a runabout body mounted on the standard Waltham two-cylinder delivery chassis for 1908.

The White steamers are also the sole representatives of their class, and as such hardly come within the purview of any review of tendencies having to do with the internal combustion motor, of which the show as a whole affords so many striking examples of perfected types.



Commercial Vehicles of the Garden Show

By W. F. BRADLEY

CONSIDERED numerically, the display of commercial vehicles at the A. L. A. M. show has not assumed very large proportions. Gasoline is represented by not more than half a dozen firms, and constructors of electric commercial vehicles in several cases only show one or two examples of the numerous types produced by them. One concern had the distinction of holding a vehicleless stand, adorned only by a group of salesmen, while the show space of several other firms provided ample accommodation for spectators.

Most conspicuous of all, on account of its great size, is the Alden-Sampson gas-electric road train, consisting of a four-cylinder gasoline engine coupled up to a dynamo, the current produced being transmitted to the tractor and a series of trailers. The distinguishing feature of the train is that each of the six-wheel trailers is controlled and steered from the tractor, every vehicle following exactly in the track of its predecessor. A full train of five or six trailers, each one carrying a load of five tons, can thus be handled by one man.

In the heavy-load gasoline vehicle class Hewitt stands alone with a powerfully constructed five-ton truck, shown in bare chassis and with a stake body. The power plant, which is carried forward under the driver's seat, where it is easily accessible, consists of a four-cylinder engine with cylinders cast in pairs, developing 32 horsepower at 1,000 revolutions. Having been specially designed for this class of work, the engine has naturally been made as accessible as possible, and constructed so that any part may be inspected without dismounting the whole. As an example, large inspection plates not only admit of a complete examination of the main bearings, but allow the pistons to be removed without dismantling the engine. The valves are all on one side, flat seated and much larger than is usual in automobile practice, and are operated by a one-piece nickel-steel camshaft. On the opposite side of the engine is a high-tension gear-driven Bosch magneto, and the automatic carbureter, both easily accessible, the magneto being dismountable in a few minutes. Fuel supply is by pressure feed from a large tank hung to the side frame, to an auxiliary tank forward and slightly above the level of the engine. From here the flow to the carbureter is by gravity.

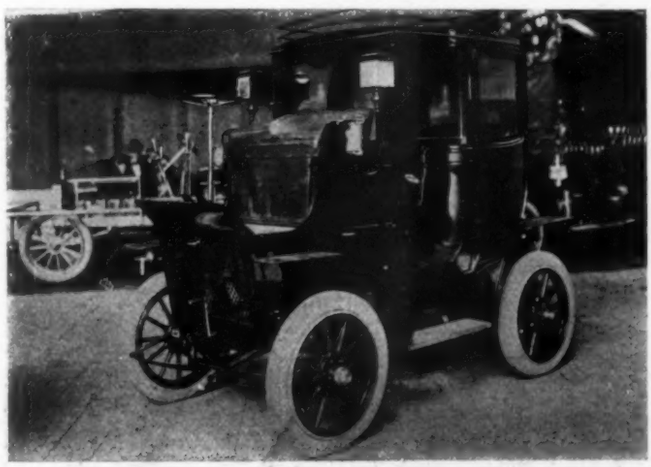
Transmission is of the planetary type, with nickel-steel gears and shaft; the improved control, by which three speeds forward and reverse are obtained, is designed to make it impossible to put in one speed until the other is automatically thrown out. Final drive is by means of heavy side chains from countershaft to the rear wheels, the countershaft with bevel gear and differential being mounted on Timken roller bearings. The economical speed claimed for the truck is seven to nine miles an hour. The maximum speed when running light is fifteen miles an hour.

In addition to their heavy vehicle, the Hewitt Motor Company displays a single-cylinder 10-12-horsepower light delivery wagon, with closed body, guaranteed to carry loads of 1,000 to 1,500 pounds.

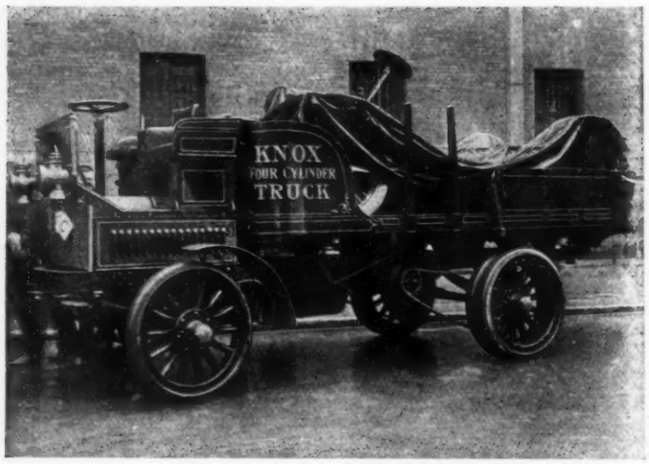
The H. H. Franklin Company's only representative in the commercial class is a light stake wagon driven by an air-cooled motor carried forward.

Knox commercials, though a big family, are represented only by the three-ton four-cylinder truck, the engine of which is carried forward under the driver's seat, leaving a body space twelve feet long by sixty-eight inches in width. Wheelbase of this vehicle is 111 inches, tread being 60 by 62 inches, single solid tires being carried on the front wheels and dual solids, 36 by 4 inches, on the rear wheels.

Although the new E. R. Thomas Company's town vehicle occupies a place in the pleasure section, it is also entitled to representation in the commercial class as a taximeter cab, it being the intention of the company not only to equip the chassis with elegant town bodies for private city use, but to place a number of simpler landaulet bodies on the same chassis for taximeter service. The chassis, which is an entirely new production, having nothing in common with the touring models of the firm, has been designed with a view to compactness and simplicity and easy handling in traffic. The power plant, a model of compactness, consists of four cylinders in a single casting, the exhaust manifold being an integral part of the casting, provision being made for carrying off the heat by external flanges as well as a water jacket surrounding all valves. To further decrease the size of the engine the crankshaft is mounted only on two end bear-



THE ATTRACTIVE FRANKLIN CAB WITH AIR-COOLED MOTOR.



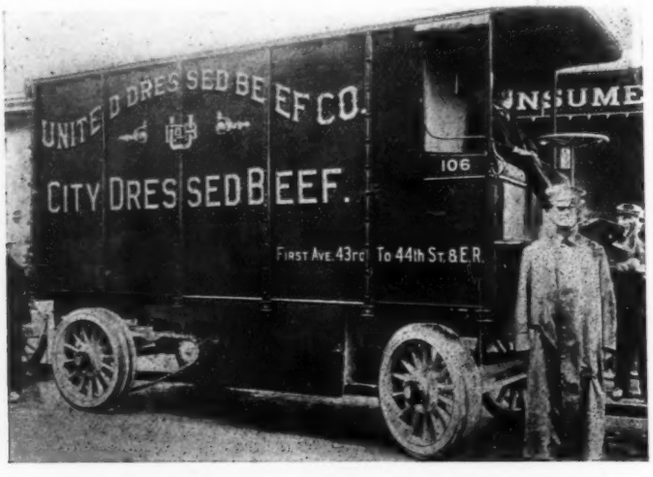
ONE OF THE FINE FREIGHT CARRIERS IN THE BASEMENT.

ings, the customary center bearing being abolished. Another distinguishing feature of the engine is thermo-syphon water circulation and the entire absence of piping, the only water connections being from the head and base of the radiator to the jacket surrounding the cylinders and valves.

Selective transmission has been employed, with the entire gear set combined in the differential housing on the rear axle. A double universal joint is provided on the propeller shaft, and connection to the power plant by a cone clutch is made through a special pivoting suspension, claimed to be an original feature.

Rear suspension of the Thomas cab is by full elliptic springs of a special design, attached to the side frame by means of projecting hangers; together with the low center of gravity, these appear likely to give very easy suspension and comfortable riding under rough road conditions. Control has been simplified to the operation of a clutch and brake pedal and a foot accelerator. The sparking point being fixed—a high-tension Bosch magneto is employed—no spark lever is needed on the steering wheel; the throttle control by means of lever has also been discarded, leaving the steering wheel absolutely free of all controlling arrangements. Gear changing by means of selective type is reduced to its simplest form; three speeds forward and reverse are provided, provision being made against accidental slipping in of the reverse by a stop on the sector to overcome which the driver must press on the head of the lever. To keep out dust as far as possible the gate sector has been almost entirely inclosed. The chassis to be used for taximeter service are fitted with a Popp taximeter operated by flexible cable.

In the electric section the General Vehicle Company provides the largest display with a couple of heavy trucks having separate motors and side-chain drive, and one light delivery vehicle.



A GENERAL ELECTRIC CAR THAT WILL CARRY FRESH MEAT.

At the Baker stand the only exhibit is a police patrol van of regulation type so far as body is concerned, but driven by electric power. Pope-Waverly shows a series of light electric delivery vehicles. Studebaker makes a display of electrics, showing various models with bodies and one bare chassis. Single and double motor electrics are the feature of the Champion Wagon Company, two types being shown.

THE SOCIETY OF AMERICAN GOOPS.

"The Society of American Goops" means that band of industrious press workers who endeavor to obtain as much free publicity as the wielders of the blue pencil will permit to filter into the news columns. During the annual shows, the "Goops" always get together, and to-night they are holding forth down in Houston street at "Little Hungary," where a gorge is taking place superior to the famous feasts of Lucullus—at least such is the case in the opinion of the "Goops," whose names are herewith given:

Toastmaster—R. H. Johnston, White Company.
Committees—Band, Alexander Schwalbach; songs and piano, R. H. Johnston; cars, menu and feed, E. Ralph Estep; invitations, Harry T. Clinton, Alexander Schwalbach, F. Edward Spooner, F. L. Farote; badges, press, Alexander Schwalbach, F. L. Farote.
Privates—C. W. Wurster, Stearns; A. L. Rich, Lozier; Charles R. Culver, Knox; J. A. Kingman, Locomobile; W. H. Workman, Packard; E. R. Estep, Packard; Charles Drysdale, Cadillac; F. Edward Spooner, Pierce; George M. Davis, Thomas; H. L. Humphreys, Welch; W. B. Walker, Franklin; H. M. Foote, Peerless; F. L. Faurote, Olds; C. W. Mears, Winton; R. H. Johnston, White; J. W. Drown, Corbin; J. F. Marstan, Pope-Toledo; John Coakley, Babcock; F. B. Hart, Rambler; C. G. Perceval, Cleveland; E. Leroy Pelletier, Ford; A. B. Tucker, Dragon; N. Lazarnick, Daguerre; Alexander Schwalbach, Darracq; Harry T. Clinton, A. L. A. M.; Arthur N. Jervis, Berliet; Duncan Curry, A. C. A. Show; Joseph E. G. Ryan, Chicago Auto Show; L. M. Bradley, A. M. C. M. A.; Jack Hiscock, Philadelphia Show; Howard Reynolds, Boston Show; J. W. Gogarn, Reo.

CHICAGO MOTOR CLUB'S 630-MILE CONTEST.

CHICAGO, Nov. 5.—Plans have been completed by the contest committee of the Chicago Motor Club for the 630-mile sealed bonnet reliability contest to be held the week the automobile show opens at the Coliseum. The dates set are November 26, 27 and 28, and the show will open two days later. The first day the cars will be sent to South Bend, Ind., and return, a distance of 230 miles. The second day to Rockford, Ill., and back, 200 miles, and on the third day to Ottawa, Ill., and back, another double century.

The trophy of the endurance contest, designed by Henry Thiede and modeled by H. G. Donar, of Chicago, is cast in bronze and mounted on an ebony base. Its height, including the base, is 42 inches. It is intended to make 150 reproductions of the trophy to be used as part of the decorations of the Chicago show, each one being mounted on a decorated column trimmed with red plush, with white and gold effects. The valuable and artistic trophy has been offered by S. A. Miles, general manager of the National Association of Automobile Manufacturers, which conducts the big show in the Coliseum.

ARTISTIC TROPHY FOR THE CHICAGO ENDURANCE RUN.

Concerns That Took Garden Space Only

WHAT would an automobile show be without its wealth of accessory exhibits which lend so much of life and variety to every event of the kind? And usually the accessory maker and dealer is to be found wherever there is such a thing as an automobile show, even though two happen to follow each other in such close succession as is the case with the recent affair in the Grand Central Palace and this week's show in the Garden. There are some exceptions to this, however, in the shape of makers who are confining their efforts to the licensed show in the Garden, among those who are making a display in the latter alone, being the following:

Avery Portable Lighting Company.—"Autogas" tanks, made by this concern, at its factories in Milwaukee, Wis., are shown in two sizes, the smaller measuring 6 by 22 inches, containing 50 feet of gas ready for use, and weighing 30 pounds, while the larger cylinder measures 7 1-4 x 22 inches, contains 85 cubic feet of gas, and weighs ten pounds more. These tanks were invented by P. C. Avery in Chicago early in 1903, and were first known as the "Averylite tank." The tanks are made by pressing a disk of steel into the required shape, thus making the cylinder seamless, except at one end, which is accurately fitted and brazed in. Each tank is tested to a pressure of 600 pounds and has a tensile strength of 1,500 pounds to the square inch, though the normal gas pressure never exceeds 300 pounds. Should the tank be placed in a hot fire, a special safety plug with which it is equipped will break at 500 pounds pressure.

Bethlehem Steel Company.—Pressed steel frames of standard patterns, dropped-forged axles, crankshafts, steering knuckles, and a number of other automobile parts in special steels, rolled particularly for this purpose, go to make up this firm's exhibit. They also show samples of a line of high-speed tool-steel, specially adapted to working automobile steels. As they have one of the largest drop-forging plants in the country, the range of parts which they are equipped to make covers everything for which a drop-forging may be employed on a car.

Brennan Manufacturing Company.—Where motors are concerned, this firm is in an excellent position to take care of the demand for both air and water-cooled patterns in the four-cycle type. They show examples of both in the four-cylinder vertical type, but also make the horizontal opposed twin-cylinder type, embodying many special features of their own design, as well as six-cylinder vertical motors, which are extremely compact power units. They are representative of the highest current standards of motor design, and particular attention has been paid to attaining the maximum of simplicity.

Columbia Lubricants Company.—All oils look alike to the average visitor to automobile shows and, as a general rule, exhibits of lubricating oil are not the most attractive things in the world to the man in the street. But it is quite different with brands such as the "Monogram" shown by this concern especially for automobile use, and to which they have devoted their attention for several years past. In the name "Monogram" many an autoist recognizes a familiar friend.

Dow Tire Company.—Although it is less than a year ago since the Dow non-deflation tube was presented to the automobile world, the record it has made in the meantime has been such as to attract widespread attention from autoists generally. The exhibit of this concern is consequently of more than passing interest in that the performance of driving nails and other puncture-producing devices into a pneumatic tire without the latter losing its inflation, is somewhat puzzling at first sight. The Dow inner tubes are made of two layers of a special material around the greater part of the circumference. Between these two layers is placed a special compound which has the property of automatically healing punctures in the tube.

Cook's Standard Tool Company.—Every autoist knows the Standard jacks, for they were one of the first for automobile use to be placed on the market. They are of the single-acting type in which the car is lifted or lowered only on the downward stroke, the upward stroke being free. They are shown in a number of sizes, capable of lifting the heaviest cars made.

Dietz Company, R. E.—It is evident that this concern has had its ear to the ground during the past year, as one of the things to be found in its exhibit consists of a line of lamps which are shown in a handsome black enamel finish, designed to correspond with the polish of the rest of the body, and which will not require any attention in the way of cleaning, which is the greatest drawback of the polished brass lamps. They also show a complete line of searchlights in different sizes, together with the Dietz generators. The latest productions in square side lamps for both electricity and oil are also a feature of their showing.

Duff Manufacturing Company.—"The jack that Duff builds," in other words the Barrett automobile jack, is the subject of this exhibit. They are shown in both single and double-acting types and embody an improved lowering device. They are compactly proportioned, very substantially made, and very simple to operate.

Empire State Tire Company.—Numerous claims of superiority are made by the makers of these tires over other types, for the reason that the tread of the Empire is extensible, and consequently, when inflated has a much greater wearing surface than is usually the case. The successive discontinuation of the layers of fabric at the hinge, and the substitution of layers of rubber, renders the universal breaking at this point practically impossible and prevents blowouts, except as a result of direct puncture. This firm also shows the Greenwald non-skid tread and a puncture-proof armor known as the "internal protector."

Edouard Dubied & Company.—This concern is represented in this country by Ch. Dien, who shows the "Edco" spark plugs made by them. The latter have several advantages in construction, the absence of a joint between the insulator and body of the plug making it perfectly gas-tight, while the insulator of steatite is milled directly into the metallic body of the plug, thus giving hermetical sealing. Ch. Dien also shows a line of valves, lugs, screws, nuts, non-skid rivets and chrome leather.

Hardy Company, R. E.—"Sta-Rite" specialties form the subject of this firm's exhibit and include such things as ignition plugs, spark coils, and automobile accessories. The "Sta-Rite" plugs have been adopted as a standard part of the equipment of a very large number of American cars, and are probably made in a greater number of different styles, types and sizes than any other line of plug on the market. In fact, there are six distinct styles and 47 sizes, the patent rights and the exclusive sale of these plugs being owned by this company. This firm also makes a line of mica insulated plugs, as well as high-tension spark coils.

Hoffecker Company.—Hoffecker speed indicators and mile registers form the subject of this firm's exhibit, and several of them are shown in operation. In some instances this is done with a glass enclosing case substituted for the usual metal case, so that the spectator may note the extreme simplicity of the apparatus as well as the manner in which it works. Just what the interior of the usual speed indicating apparatus might consist of has long been a puzzle to the average person, so that this method of displaying the instrument attracts a great deal of attention.

Indestructible Steel Wheel Company.—Automobile wheels of a totally different type that well merit the name of "indestructible," are shown by this firm. They are of pressed steel put together by riveting, the whole being especially designed and offering many advantages for automobile use. They are made in three gauges of metal, weighing from 11 1-2 to 18 pounds up per wheel, making them applicable to all weights and sizes of cars, and having a carrying capacity of 15,000 to 50,000 pounds, for pleasure or commercial vehicle use. The pleasure model is made particularly light by means of perforations between the spokes. The fact that these wheels are employed on the car used by the circus performers in "Looping the Gap" speaks for itself.

Janney-Steinmetz & Company.—Among the numerous specialties shown by this firm, doubtless the one which attracts most attention is the Hill lock valve, otherwise known as the "automobile hitching post." This is a Yale lock cut-off for the gasoline pipe, equally adaptable to either gravity or pressure feed, and which effectually prevents a car from being stolen. They also show their line of cold-drawn seamless steel tanks.

Kilgore Manufacturing Company.—Here the autoist is invited to "ride on air," as the Kilgore shock eliminator is the only one of the pneumatic type on the market, acting as it does on the same principle as the car's tires. The Kilgore eliminator works on the principle of actually absorbing the shock in compressing air, this being clearly illustrated at the exhibit.

Pittsfield Spark Coil Company.—One of the latest things shown by this concern is a new high and low-tension switch, made for use in connection with their own type of high-tension magneto and also as part of a four-unit coil, such as is generally used in the standard dual system of ignition. The Pittsfield magneto, which is of the high-tension with non-vibrating coil type, has been greatly improved since its first appearance last year, and is shown in operation in connection with the Jewel plugs, made by this firm, as well as their new switches. The latter are of extremely neat design, all external parts being of polished hard rubber. They also show a complete line of coils for every form of service, including motorcycle, boat, stationary and dashboard use, as well as the Pittsfield timer, which is made in all sizes from one to eight cylinders.

Precision Appliance Company.—No better means could be devised to show the accuracy, reliability, and smoothness in action of "The Shooting Oiler" than the makers of the Hill Precision oilers have adopted at their stand. This represents the dash of a car with a glass footboard, beneath which is a small tank. The different leads from an oiler, which is being run by a small electric motor forward of the dash, terminate just under this glass, so that the spectator is given an interesting object lesson in the regularity of mechanical force-feed lubrication. By looking on the other side of the dash there may be seen the mechanism required to accomplish this object.

Rushmore Dynamo Works.—The chief thing of interest to the visitor at the exhibit of this concern is a 30-inch lens for one of the huge battleship projectors used in the U. S. Navy. This is shown in the rough and gives an excellent idea of the vast amount of work that must be required before it emerges in the finished state, as surmounting it are shown two finished mirror lenses of smaller size. This concern also exhibits a complete line of their automobile searchlights with Rushmore generators. Complying with the demand that is beginning to make itself felt, some of these are displayed in an attractive dark finish.

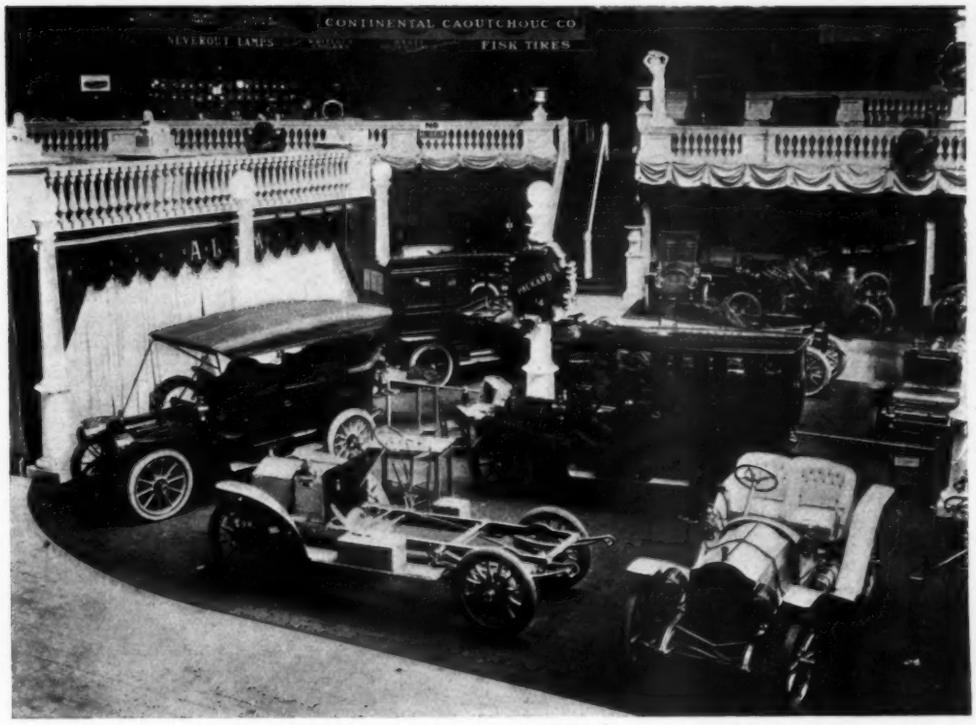
Smith & Son, S., Ltd.—Among the novelties shown by the makers of "Perfect speed indicator" is one specially designed for use on limousines. On the dash this shows a speed indicating dial, a clock face, and an electric annunciator with the usual signal. On the interior of the limousine body there is a duplicate of the speed indicating dial, and the button plate for operating the annunciator. They have also taken the agency for the "Crack" electric horn attachment, which may be fitted to any horn, so that the latter can be blown at will either by an electric button on the steering wheel or by the usual bulb.

Springfield Metal Body Company.—This firm makes a specialty of manufacturing aluminum and steel bodies, hoods and fenders for automobile use. Samples of completely equipped open and closed bodies are shown at their stand and form striking illustrations of the efficiency of this type of construction, on which the builders hold a number of patents. Their line includes every standard form of body, such as the popular straight line, five and seven-passenger tonneau, curved line bodies of their own design, runabouts, surrey types, and various inclosed bodies.

Stackpole Battery Company.—This firm manufactures a line of dry cells specially designed for automobile and motor boat use and of which they show a complete assortment in varying sizes at their exhibit. The brands under which the cells are made for this service are the "Autocrat," "Wizard" and "Radium."

Uncas Specialty Company.—The Leavitt secondary distributors and spark timers, which are shown in operation by this concern, always prove a never-failing source of attraction to the autoist who is interested in improving the ignition of his car, as well as of the manufacturer investigating the merits of new specialties in the ignition field. The primary timers are made in a range of sizes from single to six-cylinder motors and are of the ball-contact type, though this firm also shows a line of wipe-contact timers of the roller type, known as "The Leavitt timer, Lacoste pattern," beside which they show other Leavitt specialties.

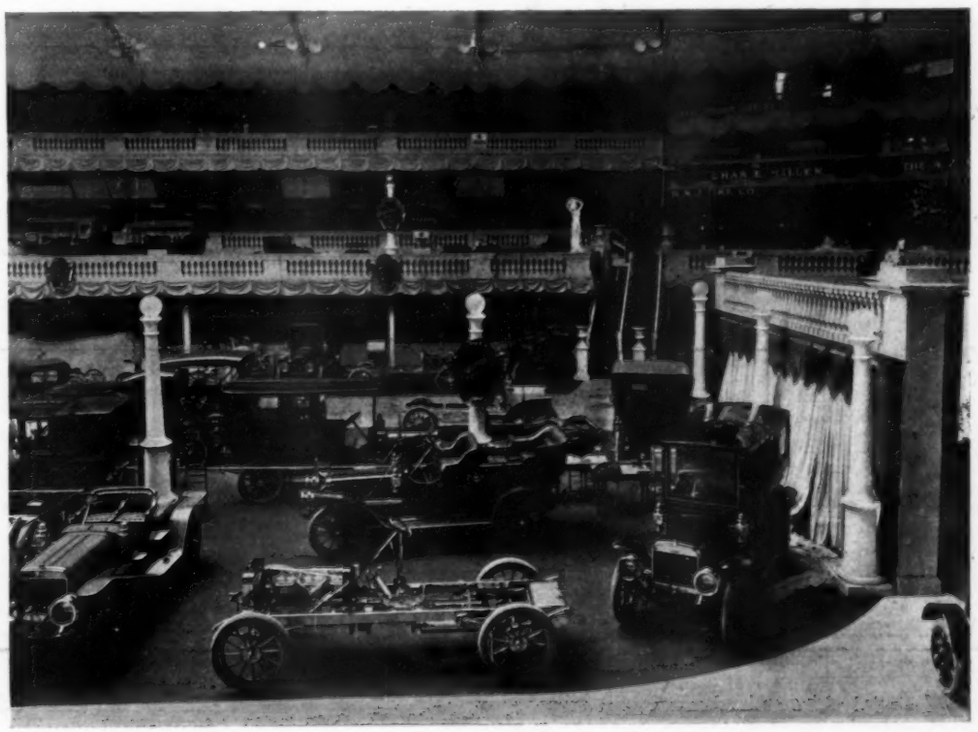
Vacuum Oil Company.—Vacuum Mobiloils are too well known to the average autoist to require any particular introduction, although the exhibit of this concern in the basement has been made unusually attractive considering the nature of the article shown. A stack of varnished oak barrels reaching half way to the ceiling, each one bearing a different brand, gives some idea of the numerous grades of lubricating oil refined.



WHAT THE ELECTRICS REVEAL.

There is a quiet air of refined dignity about the restaurant annex at the Garden that is totally lacking, either in the main arena itself or any of the other overflow exhibits, for this year it is wholly given over to the exhibition of electric vehicles, and it may be added—there was not enough space to go 'round, so that some of them were compelled to exhibit in the basement. Everything is so clean and neat about an electric—in fact, they are the embodiment of luxury and comfort, so that such things as dirty oil or gasoline seem totally foreign to them. This does not seem to be the case with some of the cars staged by the General Vehicle Company, as they bear such a close resemblance to the standard types of gasoline cars that they are frefrequently mistaken for them. This concern exhibits a line that marks quite a departure in the way of electric vehicle design, in that a great deal of the experience gained in the gasoline car field has been taken advantage of by the electrical engineer. Thus the pressed steel frame, the long semi-elliptic suspension and the standard form of wheel steer have been utilized, while an extremely natural looking bonnet has been impressed into service to house the battery. Further, the somber colors of the coach builder have given way to the more attractive finishes familiar on gasoline cars, and the bodies are patterned after the type used on the latter, so that the resemblance is complete. But the greatest improvement has been made in the power plant and drive, now much more efficient.

The Baker runabout is another production that appears to be out of its element in the midst of a number of electric cars, as since its first appearance last year, this electric roadster has been considerably improved and is difficult to distinguish from the most up-to-date type of gasoline car. This concern also exhibits a complete chassis illustrating the simplicity of the mechanism of an electric as exemplified by their special design and construction, together with several of their leading types of cars, such as a coupé, though the most striking car in the Baker exhibit is a hansom cab with the driver's seat forward. The "Babcock Idea" in electrics is illustrated by several of the cars of this well-known make, supplemented by a collection of attractive literature on the subject, which tells of the things the Babcock electrics have achieved in their long and successful career. The line of Columbus electrics is one of the most complete to be seen, and in addition to several types built by this concern, it also includes a complete chassis. Pope-Waverley is synonymous with electrics and one of the special types of rear axle driving units with its herring-bone gears as employed on these cars shows how they differ in design from other electrics and the reasons for their superiority. They also exhibit several of their standard types of complete cars. There is a most complete showing of the pioneer Columbia electrics, particularly in the heavier types such as broughams, and the length of time this make has been on the market is a recommendation that speaks for itself. The R. & L. electrics, made by the Rauch & Lang Carriage Company, Cleveland, O., complete the exhibits in this section and they are particularly worthy of attention. The Detroit electrics made by the Anderson Carriage Company, Detroit, Mich., are shown in the basement.



Col. George Pope, Chairman Exhibition Committee: "No exhibition equal to it has ever been held before in this country. It marks an epoch in the construction of automobiles, and the man who cannot satisfy his automobile wants, be they large or small, in the present show, is certainly a difficult one to please."

* * * *

W. E. Metzger, of Executive Committee: "We are thoroughly pleased with the show; agents are here, business is being done, and genuine interest is shown in the exhibits. I believe that there are more people here during the day than at any previous show, though the gate receipts have not been announced yet. Personally the show is held rather too early, the October date having a tendency to cut down Autumn sales."

* * * *

Charles Clifton, President A. L. A. M.: "Certainly the show is an excellent one, the exhibits being superior to anything shown before in this country. There is a sense of proportion about the hall, an excellent showing of the exhibits without anything being hidden by decoration, that is thoroughly pleasing. Having just arrived from a city where the dollar is not as mighty as in New York, but where we still pay out in hard cash, I am not able to judge more closely the results of the show. Naturally the financial disturbances will affect us, for automobiles cannot be produced automatically whatever the conditions and stored up until there is a demand for them; but the tightness is not likely to be more than a condition that is merely temporary."

* * * *

Football and automobiles have few things in common, but the advent of the many sixes has been responsible for the memorizing of cabalistic trains of figures on the part of the numerous salesmen, and not a few of the visitors have been surprised to overhear one of these attentive and earnest, dinner-coated, walking encyclopediæ of automobile lore at the Peerless stand say in all seriousness to an interested onlooker, "1-3-2-6-4-5"—and his hearer seemed to be "on." He had his little book by heart, did this "explanationer," but at most of the other stands where sixes were a feature the answer was usually: "I'll give it to you in a moment; I have it in my note book." "It" was the order of firing of the cylinder of the sixes, and the reason for the unusual interest displayed in this fact was that each maker seemed to have worked out a different combination. In the Oldsmobile this is 1-4-2-5-3-6, and in the Winton 1-5-3-6-2-4, and different combinations are to be found on the other sixes, the only thing they have in common being the use of the forward cylinder as the starter. Among the visitors there is a tendency to catch on quickly to the technical details.

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The fair sex displays much keener interest in the exhibits at the Garden than has ever been shown before. The interest, too, is not merely in the upholstery, mirrors, and toilet requisites of the various handsome limousines, but in the mechanical construction of engines and transmission. At one stand a fair visitor was deeply interested in the starting handle, and, with a skill that revealed more than a passing acquaintance with the gentle art of cranking, seized the lever of a well-known make and pointed out a structural arrangement which made it difficult for a lady to start up that particular car. Another fair visitor discoursed on the make-up of a gear box in a manner that would have been a credit to a mechanic. Women at the steering wheel, testing the disposition of the pedals and levers from their standpoint, were frequent.

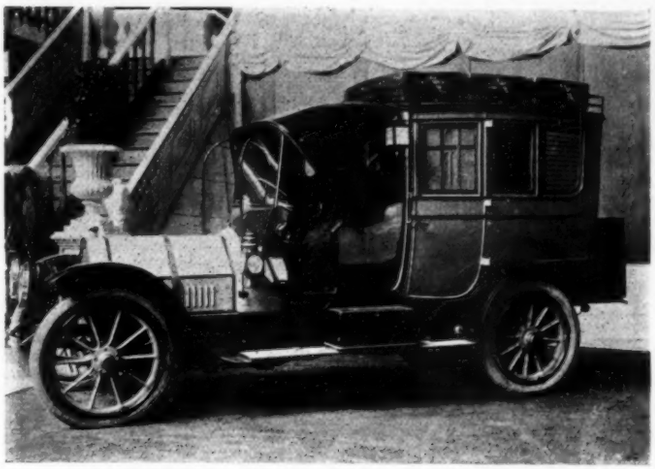
* * * *

"What's that gasoline car doing in here with the electrics?" is a question that is asked every time a newcomer to the Garden strolls in among the attractive collection of *de luxe* electric vehicles in the restaurant annex, and the surprised query is well-justified, for some of the new General Electric pleasure cars, with their bonnets of the conventional type concealing the batteries, their standard wheel steers, and, more than anything else, the usual bronze side levers, look like anything but electric cars. It is difficult at first sight for even the most experienced autoists to distinguish the difference, and this is made doubly so by the fact that many of the latest models of gasoline-driven cars have dashboards that are practically free from the encum-

brances of oilers, coils, and switches that formerly made them easy to recognize. When Alexander Churchward, the designer of the new General cars, drove one of them up to the Garden door, he was warned to take the gasoline out of it before taking it into the building.

* * * *

Probably there are few better authorities on the good points of six-cylinder construction than "Teddy" Dey, who has charge of the exhibit of the George N. Pierce Company, which shows a "big" and a "little" six. And his is the



STAGE COACH TYPE SHOWN IN POPE-TOLEDO EXHIBIT.

familiarity of personal experience, not theory, for he handled the first "Big Six" Pierce in the A. A. A. tour of a year ago, and went over the route of this year's tour twice in the same car—first as a pathfinder, and secondly in the tour itself, in which he made a perfect score, being instrumental in large measure in again winning the trophy for the Buffalo club.

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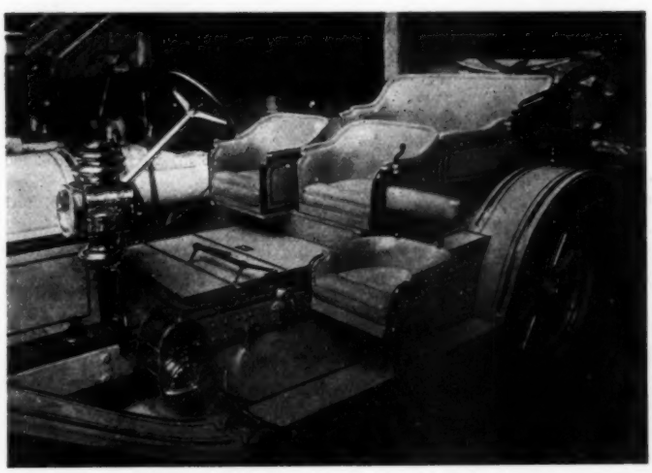
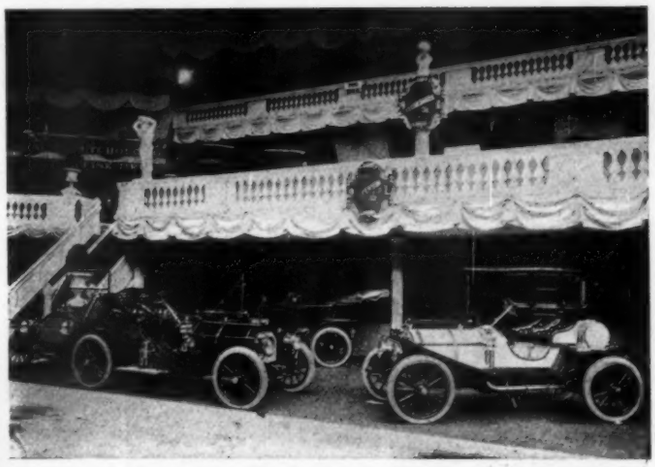
Real interest, and not mere idle curiosity, was a characteristic of the Garden display. This could be better judged



MECHANICIAN'S SEAT A FEATURE OF THE STEARNS.

by the crowds on the galleries than on the main floor, and, although it involved climbing a steep stairway, visitors were always plentiful "up aloft." If for no other reason, it was worth going up merely to note the many ingenious appliances designed by accessories exhibitors to attract the attention of passersby. Some of the "stunts" of the electrical men were hugely successful.



WHERE THE APPERSONS WERE ADVANTAGEOUSLY PLACED

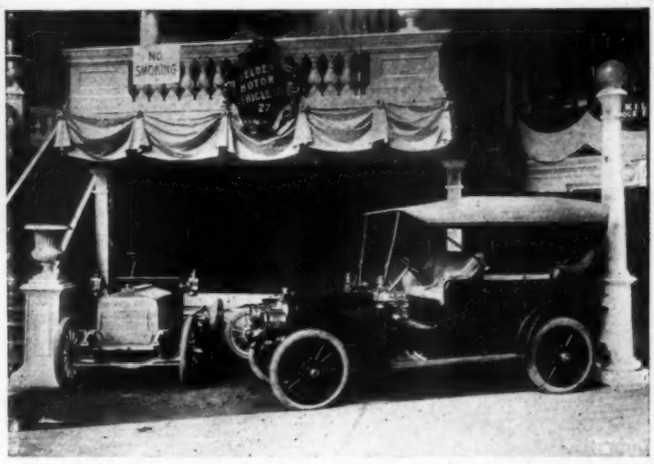
It did not take long for feminine New York to spot the dainty Packard runabout built "for two and a man behind" as "just the loveliest, dearest little thing." With its delicate lavender finish set off by gold striping and pure white upholstery, it only seemed natural to dub it the "honeymoon car," which was done forthwith. It has been the cynosure of all feminine eyes ever since the show opened, and scarcely a girl leaves the Packard stand to pass on to another without a backward look of longing: "Isn't it just too cute!"

* * * *

Miss Hebe White moved from the Palace to the Garden without soiling the spotless raiment that adorned her at the former place, and it only goes to show how clean a nice girl can keep herself, even if there is a whole lot of "nasty oil" around, for Miss Hebe holds forth at the stand of the N. Y. & N. J. Lubricant Company, and she's as good a "mixer" as the non-fluid oils, which she takes pleasure in telling visitors all about, and she doesn't have to look sharp when showing how smoothly the non-fluid lubricant sticks to business in the Matheson gear-box, because it stays where it is put.

* * * *

Driving nails into an inflated tire, and then running it under considerable pressure corresponding to the load of a car on the rear wheels, at a rate equivalent to the usual travel of a car, never fails to draw a keenly interested group of spectators about the stand of the Dow Tire Company, who have designed an elaborate apparatus to simulate the conditions under which a pneumatic tire runs when on a car. It certainly puzzles the average man to figure out why the air does not follow the good-sized nail when it is drawn out of the tire, but it is a matter that is easily explained.



THE SELDEN—A NEWCOMER THAT SHOWED UP WELL

Walter White.
H. K. Sheridan.

Frank Nutt,
Elwood Haynes.

Edgar Apperson.

C. W. Mears,
C. B. Shanks

W. H. Kirkpatrick,
E. H. Parkhurst.

SOME OF THE WELL-KNOWN FIGURES OF THE INDUSTRY SEEN ABOUT THE GARDEN.

THOMAS HENDERSON ELECTED N. A. A. M. PRESIDENT

AT the annual meeting of the National Association of Automobile Manufacturers, Inc., held at the Hotel Victoria, Wednesday morning, Thomas Henderson was elected to the presidency, succeeding Albert L. Pope, who presented a very complete and exhaustive report of the work of the association during the past year. Hereafter the initiation fee for membership will be $500 instead of $25.

These members of the executive committee were re-elected to serve for three-year terms: S. T. Davis, Jr., L. H. Kittridge, W. E. Metzger, Charles Clifton, and S. D. Waldon.

At the meeting of the executive committee, which followed the annual meeting, these officers were elected: President, Thomas Henderson; first vice-president, S. D. Waldon; second vice-president, W. E. Metzger; third vice-president, L. H. Kittridge; secretary, C. C. Hildebrand; treasurer, W. R. Innis.

Responding to the request of the American Automobile Association for the appointment of a member for a conference committee composed of delegates from various national automobile bodies, the president was instructed to make such an appointment. The suggestions relative to racing on circular tracks, recently adopted by the conference held under the auspices of the A. A. A., were referred to the N. A. A. M. contest committee.

In the course of his report, retiring President Pope said:

It has been the good fortune of all my predecessors in office to be able, in opening their annual report, to congratulate you and the entire industry upon the favorable conditions under which the automobile business has been conducted. At our last annual meeting the retiring president noted that the members of this association had been reasonably conservative in the number of cars produced, and expressed the opinion that so long as this conservatism went hand in hand with quality the automobile industry would be conducted on a safe and sound basis. The wisdom of the advice implied by his remark has been proven by recent events.

Not because of over production; not because there has been any falling off in quality; not because the country is less prosperous or the purchasing power of the people is exhausted, but because of abnormal conditions for which no manufacturer can be blamed, which no manufacturer could accurately foretell, and against the effects of which no manufacturer can consider himself absolutely proof, the time has come when I consider it my duty to emphasize the remarks of your last president, and to say that it is now necessary, and will, in all probability, continue necessary all through the season of 1908 and possibly well into the season of 1909, to exercise the utmost caution.

Even the ablest of our financiers is unable to accurately forecast the conditions that will prevail during the next few months. We know that the prosperity of the country is as great as ever, we know that the people of the country individually have more wealth than ever before, we know that no real reason exists for supposing that these splendid conditions will undergo an early change. But wealth is not money, and at present we have not sufficient money in circulation to represent the wealth and facilitate its transfer.

Perhaps so far as the automobile industry is concerned this condition is not in all respects deplorable. Encouraged by unfounded stories of fabulous profits there have come into the automobile industry so many manufacturers, all seeking to do business on so large a scale, that the production might easily exceed the demand. It is an extremely fortunate fact that most of the older, better, and more conservative manufacturers have exercised great caution in production. But as to the less conservative element, it is not unlikely that had nothing occurred to cause them to pause, either of their own volition or perforce, the production would have been excessive. We all realize that this would have meant failures, demoralization of prices among the less important manufacturers, and an uncomfortable time for the entire industry until these troubles had, in the ordinary course of business, been cleared away.

The automobile industry can, therefore, learn from the existing conditions a splendid lesson. It can learn that only in times of prosperity can the country absorb the number of cars which the manufacturers are now able to make; it can learn that the prevailing conditions will result in a closer scrutiny of quality than has heretofore existed; it can learn that only those with abundant capital can safely expect to manufacture cars in large numbers, and then only provided they possess the necessary plant and selling organizations to enable them to produce and market their goods more economically than they have been doing; in other words, that it will be necessary, not perhaps to lower prices, but to provide better cars than ever before for the money asked. They can learn that it is far better to make 100 cars at a profit than 200 without profit or loss or 300 resulting in failure.

It has been the policy of the Executive Committee of the National Association to admit to membership only those concerns on which it can count for conservative action in times like the present, and for excellence of production under all circumstances. Membership in the National Association does, and I hope always will, stand as a guarantee of these requirements.

This does not mean, however, that there are no manufacturers outside of the association possessed of the qualifications above set forth. There is another reason, and it is found in the fact that there is in the treasury of the association a large sum of money which belongs to, and exclusively to, the present membership. The executive committee has regarded itself, as it unquestionably is, as responsible to the members for the proper care of these finances. The members of the executive committee do not feel that as caretakers of the fund they are warranted in decreasing the interest therein of any member by the admission of some new member, who would thereupon become entitled to a full interest in the fund, unless that member brings to the association some strength and a sufficient return for the interest which, by admission, he would obtain.

The present initiation fee is $25, upon the payment of which sum a new member would become entitled to, approximately, a one-fiftieth interest in a fund of approximately $40,000, which will, in all probability, be shortly increased by a substantial profit upon the Chicago show.

A 1,000 Miles of New England

by A. L. Westgard

THROUGH CRAWFORD NOTCH.

THE ROAD NEAR LENOX, MASS.

AFTER sifting many plans for two weeks' vacation this summer, we finally decided upon a tour which would offer fair roads, great diversity of scenery, and a good hotel at the end of a day's journey. Being the proud owners of a model R Ford runabout, we received a great many admonitions from well-meaning friends not to undertake such a long tour as we had mapped out, owing to the mountainous character of the country and the length of the trip, a thousand miles or so.

However, we went ahead with full confidence. We fitted out with extra shoes, inner tubes, and spare parts, which, with our baggage, altogether weighed some two hundred pounds. Suit cases were enclosed in rubber sheeting and disposed of on the running boards and on the top. Beside, we carried a refrigerator basket for lunches, as we expected to eat our noonday meal "a la picnic."

On the First Day, 92 Miles.

Our first day's trip carried us from New York along the Boston Post road through Greenwich and Bridgeport to Stratford. We found that the road was being repaired at several places, necessitating a couple of detours. The traffic was heavy on this part of the trip and the scenery not particularly attractive, as the road for the greater distance lies so far back from Long Island Sound.

From Stratford we turned inland, following the Housatonic river to Shelton. This was a good gravel road and offered many scenic beauty spots. Crossing the river at Shelton, we followed the valley of the Naugatuck river north. The road is somewhat marred by being paralleled by a double track trolley line, but many charming vistas of the river were enjoyed before reaching Waterbury. Here we put up at The Elton. It was more than a pleasant surprise to find a hotel of such uniform excellence in a manufacturing town of the size of Waterbury. We were made thoroughly comfortable and Manager Judd took great interest in advising us of the condition of the roads to be encountered in our next day's journey. The distance covered the first day was 92 miles, negotiated without a hitch.

Into the Berkshires on the Second Day.

The next day continued us up the Naugatuck valley through Thomaston and Torrington to Winsted, over fair dirt roads with more fine scenery. From Winsted we turned west to Norfolk; on these few miles we encountered the first of any heavy going we had met with so far. It was up grade and sandy, but our little car did it splendidly. Beyond we found fine roads and a great deal of macadam through Great Barrington and Stockbridge to Lenox, Mass. We were now in the far-famed Berkshire Hills. Putting up at The Aspinwall, located on top of a considerable knoll, we enjoyed all the comforts of another first-class hotel, with beautiful views in all directions. A commodious garage is located within the hotel grounds and the little car got a well-earned grooming that night. The distance covered the second day was 74 miles.

Starting out the third day we skimmed along a road to Pittsfield, whence our route led via Lanesboro and New Ashford into the very heart of the Berkshires, with majestic Greylock towering on our right. The views were particularly fine, the road dirt but good. Arriving at the old town of Williamstown we were informed that the speed limits were being rigidly enforced and that we had better "keep crawling." We "crawled" past the venerable buildings of Williams College and struck out up the Hoosic valley to Pownal, Vt. Here we did our first serious stunt of hill climbing. The road leads up along the side of a hill and its steepness, narrowness, and number of waterbars would have long remained in our memory were it not all forgotten and forgiven on account of the enchanting views of the beautiful valley below.

Continuing north over more level country, we passed through Shaftsbury to Bennington and took a snapshot of the famous Battle Monument. Shortly beyond Bennington we encountered another stiff climb, beyond which the country was rolling and the road fine the rest of the way to Manchester. On entering this town we passed the splendid golf links of the Ekwanok Country Club, said to be one of the finest in America. The town is situated in a beautiful valley at the foot of Mount Equinox, which rises thousands of feet above it. We were made comfortable at The Equinox House, one of the old hostelries of the New England States. We covered 64 1-2 miles during the day.

Granite State on the Fourth Day.

Upon mentioning that our next day's route led over Peru Mountain on the other side of the valley, we were told all sorts of horrible tales of its steepness and its many "thank-you-marms," but by this time we felt that our "pocket edition" could overcome any difficulty of that nature, so we started out full of confidence. Three miles from town, just beyond the village of Manchester depot, we began to strike the grades, at first easy, then more steep. Just at the foot of the mountain itself we were pleasurably surprised to find a toll gate, as this led us to think that the half-dollar tax must indicate that the road ahead certainly had had some attention. This, however, proved not to be the case. It seems to be entirely "a la nature." We had three and a half miles of steady climb, not so very steep after all, but owing to hundreds of waterbars, one every thirty to forty feet, we were compelled to take the entire ascent on the slow speed. This naturally tended to heat our small high-speed engine. However, we backed down into one of the waterbreaks four or five times and got cool water from the brook alongside the road and thus had no difficulty in gaining the summit. We were the first who had ever taken a low-powered runabout over this mountain, and, of course, we were duly proud.

The road now led down long grades through Peru to North Derry, beyond which town we had another stiffish climb, then down more grades via Simonsville, through Chester to Spring-

OLD MASONIC BUILDING.
An ancient landmark at Woodbury, Conn., about 200 years old.

field. Just beyond we crossed a toll bridge over the Connecticut river into New Hampshire, where the roads seemed to be better. It was mostly macadam to Claremont, then fair dirt through Newport to Newbury, located at the south end of Lake Sunapee. Bending north along its east shore we passed the country estate of the late Secretary of State, John Hay, and arrived tired but happy at Soo-Nipi Park Lodge, a splendid hotel located half way up the east side of the lake and offering a grand view to the westward. We covered 74 1-2 miles this day.

The next day it rained in the forenoon, and we spent the afternoon making a circuit of the lake with Manager Marvin, of the hotel, who pointed out the beauty spots of enchanting Lake Sunapee.

In the White Mountains on the Fifth Day.

Our fifth day on the road carried us over uniformly good dirt roads via Danbury to Bristol in the Pemigawasset Valley. Here we struck out north, skirting the east shore of beautiful New Found Lake to Plymouth and encountered some four miles of heavy sand near West Campton. We were now entering into the White Mountains region, as evidenced by the towering hills around us. However, the road up the valley to Flume House was not at all hilly. We took a good view of the profile of "Indian Head," just beyond the hotel. The only serious climb is in the Franconia Notch, about a mile beyond Flume House. Upon reaching within a hundred feet of the very top of the grade we encountered a short steep pitch which brought the gasoline below the level of the carbureter and we were "stuck." How we regretted not having procured a little extra "gas" at Bristol or Plymouth! However, regrets were vain—we sat down and waited, and it was fast getting dark, too. In the course of time—it seemed such a long time to us—a team came up the hill. The driver generously offered to go to the Profile House, three and a half miles distant, for some gasoline. Needless to say his offer was accepted; it might also be added that the boasted price of one dollar a gallon for gasoline frequently paid by tourists in Europe "looked like thirty cents" when compared with the cost of the small quantity we needed. After a couple of hours' tedious wait there in the woods we were once more under way. We had intended to keep on to Bretton Woods, but decided to spend the night at the Profile House in order to view the famous "Old Man of the Mountain" by daylight.

Next morning we had a good look at this freak of nature, a perfect profile of a face appearing at the very edge of a precipitous cliff only a few minutes' walk from the hotel. We continued over a sandy road to the Profile Golf Links, whence a new fine gravel road led direct to Twin Mountain House. From there the road, now more sandy, with numerous railroad grade crossings, followed the Ammonoosuc river direct past Fabyans to Bretton Woods, in the very heart of the mountains. We had traveled ninety and a half miles since leaving Sunapee Lake. Bretton Woods is a sort of kettle surrounded by towering mountains, Mt. Washington, the hoary giant, overtopping the rest. The Mount Washington Hotel, where we stopped, is located on a knoll in the very center of the kettle, the Mount Pleasant House, under the same management (Anderson & Price), is at its western edge, and half way between the two hostelries are the garages, with room for seventy-five cars, and The Bretton Arms, which is run as a hotel for chauffeurs. Beautiful golf links extend to the south from the hotels. A couple of days were spent in thorough enjoyment of this magnificent region and its splendid hotels. The little car, too, got a cleaning; but let me say right here that, aside from carbureter adjustment made necessary owing to the difference in altitudes, it needed no attention.

The Sixth Stage Ends in Maine.

With regrets we left Bretton Woods and set out on the sixth stage of our journey, heading for Crawford Notch, in sight some three miles distant. We passed Crawford House and, entering into the "Gate of the Notch," the road wound down steep grades through the woods; the surface was, however, excellent for motoring. Passing between Mount Webster on the left and Mount Willey on the right, we finally emerged into more level country and followed the Saco river through Bartlett, past Glen Station and through Intervale and North Conway, splendidly located summer resorts. Just beyond North Conway we took a left fork of the road and went via East Conway, which offered a better road than the more used route via Center Conway, to Fryeburg, Me. The road was good dirt surface to Bridgton and Naples. Some fine bits of scenery along the numerous ponds and lakes on these Maine roads.

The route from Naples had a few miles of sand and two short but steep hills before we arrived at Poland Springe, Me., seventy-seven and a half miles from Bretton Woods. Coming as we did from the rugged nature of the mountains the peaceful and restful nature around the justly famous Poland Spring House acted like balm to a feverish patient. This hotel has magnificent golf links and beautiful views, and pure water and air. An ample garage is connected with the hotel. We were so contented that we tarried a day longer than intended.

Newcastle, N. H., on Seventh Day's Ride.

The seventh installment of our trip led us south over fine gravel roads to Portland. We skirted the beautiful harbor with its many islands and crossing the Fore river started with many misgivings on a stage of the route which has always enjoyed

ROUTE OF THE 1,000-MILE NEW ENGLAND TOUR.

ONE OF THE MANY GRAND VIEWS IN THE WHITE MOUNTAINS.—IN FOREGROUND, FRANCONIA INN AT SUGAR HILL.

an evil reputation on account of its alleged sandy condition. Though we encountered some sand in two or three short stretches we found the road not at all so bad as anticipated. From Biddeford to Kennebunk the road traversed a woods, and though a little bumpy, it was quite fair going. It would seem, however, that in wet weather this particular stretch might be pretty trying. Beyond Kennebunk the road was good. We went by York Beach and York Village, crossing the Piscataqua river into Portsmouth. We did not stop in the city, but kept right on for about three miles beyond to The Wentworth Hotel at Newcastle, 81 miles from the morning start. This place was made famous as the abode of Japanese and Russian peace commissioners and is justly entitled to its reputation as a delightful hotel. It has fine views of the ocean and Portsmouth harbor with its navy yard. It also has golf links and a good garage.

Boston at the Conclusion of Eighth Stage.

Our next day's trip being short, we started late in the forenoon and passed calm and peaceful Rye Beach and Boar's Head to Hampton. The trolley line kept us company all the way to Newburyport, Mass. As we for the first time had failed to load our lunch basket we were quite ready for lunch and were directed to Wolfe's Tavern, the only hotel in the town. Here we met with our first disappointment on the tour.

We had had good macadam roads since leaving Newcastle and these continued all the rest of the day, through Beverly and Salem into Lynn. From Lynn we went over the new Revere Beach boulevard, and it was certainly fine, curving from it directly into Fellsway, over which splendid parkway we rolled smoothly through Somerville into Cambridge. We had a little difficulty in finding our way through the cobblestone paved streets to Massachusetts avenue, which leads direct to bridge over Charles river. Three blocks beyond bridge we turned into Commonwealth avenue, Boston, 68 1-2 miles from Newcastle.

Next on to Springfield, Mass.

Next day's trip was a pleasure indeed. Splendid macadam brought us out Commonwealth avenue, through Weston and Marlboro to Worcester. Thence through Leicester, where one ascends the only hill worth mentioning in the run to Springfield. Between West Warren and Palmer are about seven miles of bad dirt road, narrow, sandy and rutty. One cannot help wonder how a State with such a large percentage of fine improved roads can allow such a condition to exist on its most used trans-state highway. We spent the night in Springfield, after covering a distance of 96 miles that day.

The tenth stage of our tour brought us down the east side of the Connecticut river, by acres of green tobacco fields, and across the bridge into Hartford. Thence via New Britain and Bristol to Plymouth, good going all the way. The distance of about one mile between Plymouth and Thomaston is down a hill so steep that even in spite of the confidence inspired in us by the past hill-climbing performances of our little Ford we were glad that the grade was down instead of up. From Thomaston the nine miles to Waterbury was the only road which we covered twice in our long journey. We made the sixty-one and a half miles to Waterbury in fine shape, the little engine still running as smooth as oil. We were glad to once more be under the hospitable roof of The Elton. Owing to the general excellence of the roads there is no reason why an average touring car could not comfortably cover the entire distance from Boston to Waterbury in one day. The 157 miles should prove as easy as many a trip of half the distance.

The eleventh and last day of our travels carried us through Woodbury, where we inspected the Masonic Building, over two hundred years old, a venerable and interesting piece of architecture. Thence through a scenic beauty spot along the Housatonic river to Danbury. Eight miles beyond, at Sodom Reservoir, the route turns up a bad dirt hill, but two miles further at the Westchester County line begins a stretch of some 58 miles of fine macadam, which made the rest of the trip via Bedford and White Plains a joy all the way back into New York, ninety-seven and a half miles for the day.

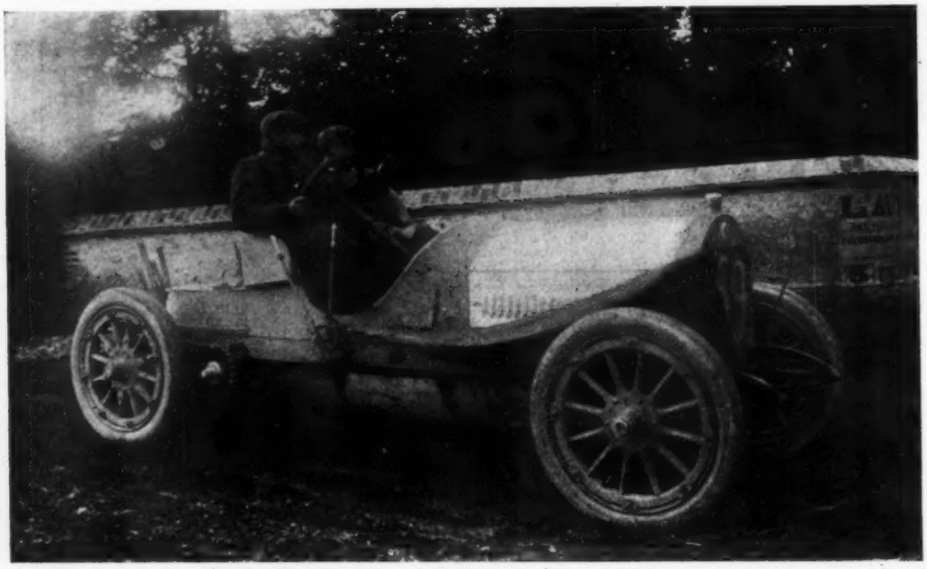
WHERE A NEW LAW IS NEEDED.

CHATTANOOGA, TENN., Nov. 2.—Catoosa county, Ga., has an automobile law which undoubtedly holds the record for severity. This legal enactment provides for a speed limit of ten miles an hour throughout the county, and stipulates that an automobile must stop 150 feet in front of every wagon, buggy or ox cart, shut off the engine and await the signal to proceed. If this signal is not given the automobile must stand until the animal-drawn vehicle has passed fifty feet to its rear. The rule for overtaking any other vehicle of a non-mechanical nature is that the automobile must remain several feet in the rear and blow the horn. If the signal is given to proceed, the automobilist must not drive by at more than two miles an hour. If no signal is given, he must remain in the rear until a crossroad or some place to turn off is reached. The Chattanooga Automobile Club is working earnestly to have the law amended.

LAKE QUINSIGAMOND, NEAR WORCESTER, MASS.

HOW THEY CLIMBED THE BIG HILL OF GAILLON

PARIS, Nov. 1.—Though eight years old, the annual romp up Gaillon's smooth-surfaced, precipitous slope has lost none of its attractions. This year the ubiquitous Edge sent a team of cars over—six cylinders, of course—and had no reason to regret his visit to this usually placid corner of Normandy. In the no-limitation speed class Newton, handling a six-cylinder Napier in a masterly manner, rushed up the kilometer hill in :26 3-5, an average of 84 miles an hour, beating all comers. Although the Britisher did not lower the kilometer record for this hill, established by Lee Guinness in 25 seconds with the eight-cylinder Darracq of Florida fame, his veteran car made an excellent showing. It was this Napier which established a world's 100-mile record at Florida two years ago, with Macdonald as driver, and made fast time in several Gaillon and Chateau-Thierry climbs. Gore, a familiar figure at Brooklands track, came second on a Mercedes with :31 3-5. Rigal's Grand Prix Darracq came third in :34 4-5, fourth and fifth positions falling to Mors and Rebour. De Lange, in the Darracq built for and victorious in the Sporting Commission Cup at Dieppe this year, captured first position in his own class, time for the kilometer being :57 2-5. Better time was made by the Bayard-Clement Targa Florio racer, which Albert Clement should have driven in Sicily, the kilometer being covered in :48 2-5. These two classes were robbed of much interest through smallness of entries, though the going was always fast.



HEMERY AND BENZ, FRENCH DRIVER, GERMAN CAR, A WINNING COMBINATION.

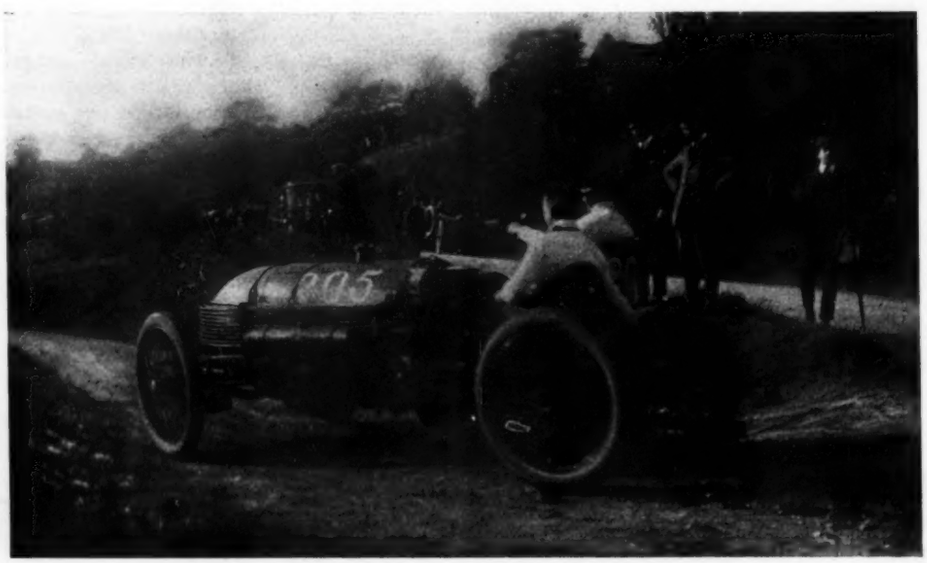
Germany, Italy, Belgium and France united in the German Emperor Cup class, victory falling to the German Benz, with Hemery at the wheel, in :38 1-5. Fiat, handled by an Englishman, to judge by the name of Johnson, was one minute slower, :39 1-5. Minerva, a Belgian product, took third position, and Rebour and Martin-Lethimmonnier, both French, were classed fourth and fifth.

In the Criterium of France class—stock touring machines of about 30 horsepower—Martin-Lethimmonnier triumphed over a De Dion and a Gladiator, in :57 3-5. It was a companion machine to the winner which met with such a disastrous head-on collision in the Criterium of France tour this summer.

After beating all comers, big and little, at Chateau-Thierry a fortnight ago, Olieslaegers, the Antwerp *Red Devil*, had to take the bottom position, owing to the stoppage of a flow of gasoline to the carbureter of his Albatross. Griffon took first and second places in the light motorcycle class, and Alcyon was first in the heavy class, each division providing keen contests.

Eighteen divisions of tourists, from light motorcycles to powerful "sixes," gave a big bunch of winners, but diminished the competitive interest of the classes. Molon's Gladiator, a top-notcher at Chateau-Thierry, beat all four-cylinder tourists by climbing the hill in :39 1-5, equal to 56 miles an hour. For a car which took part in Paris-Berlin six years ago and has only five inches bore, this is not bad going. Glenworth, handling one of Edge's six-cylinder Napier cars, made the fastest time of the tourists, irrespective of classes, climbing the kilometer in :33 1-5. Miss Dorothy Levitt, England's champion woman driver, won in her own class with a smaller six-cylinder Napier, time :49, but on general classification was beaten by a number of lower powered four-cylinder cars, among them Berliet, Mors, Gladiator, and Benz. A novelty for a French competition was the appearance of a couple of air-cooled machines; their time was indifferent and did not allow of comparison, each car being in a class of its own.

An unfortunate fatal accident marked the return journey from Gaillon to Paris. Mignot, a young chauffeur, was driving a Regina-Dixi stripped touring car between fifty and sixty miles an hour when the light basket work seat collapsed and he lost control. A tree was struck with tremendous force, the driver being instantly killed and the mechanic slightly injured.



NEWTON'S NAPIER, FASTEST OF THE DAY, DESCENDING HILL ON BY-PATH.

FRANCE'S SEVEN-DAY RACE OF THE VOITURETTES

PARIS, Nov. 1.—Sixty-three runabouts, representing twenty-eight firms, engaged in the Coupe des Voiturettes, is ample proof that France has come back in earnest to the popular car for the masses. Three years ago the first voiturette contest was held with but a handful of competitors; last year the event was of sufficient importance to be pronounced a success; this year it has reached such proportions that it may rank among the touring competitions of first order.

The modern method of holding a tour—in France at any rate—is to choose a closed circuit and allow the competitors to run round it seven days in succession, the last day being a race for the survivors, the fastest car being the winner. This has been done for the voiturettes, a triangular course, near Rambouillet, twenty-one miles round, barricaded at the corners and guarded by troops, has been fixed upon. For six successive days the little automobiles must make seven rounds of the circuit—147 miles—at an average speed of not less than 18.6 miles an hour. For some reason or other the 800 troops supplied from the nearest garrison towns to protect the twenty-one-mile course, arrived late the first day, causing the start to be delayed from 8 A.M. to noon. Impatient at the delay, a number of the drivers rushed round the course at the highest speed possible with their diminutive power plants. As a consequence of their recklessness, one soldier suffered a broken leg, there were a number of narrow escapes, and the "V" turn on the course was more dug up at the end of the first day than the bend at La Fourche on the Grand Prix circuit after speeds of seventy miles an hour. Rigorous orders have now gone forth that any driver covering a round at an average of more than twenty-four miles an hour will be immediately disqualified.

Seven cars went out on the first day, one with a broken shaft, one with a broken driving chain, one with a seized cylinder, one with a bent axle, one with a broken wheel, one through colliding with a tree, and one owing to arriving thirty seconds late on the last round. Late arrival is the only thing that counts against the competitors on this eliminating run of 882 miles. It is impossible to change any important parts, for the main organs are sealed, but ordinary repairs may be performed during running time. Immediately on expiration of time allowance each machine must declare in—or go out forever—and cannot be touched until starting time the following morning. Within the triangular course there is a busy automobile camp, for in addition to the cars staying on the spot for seven days, many of the competitors have gone into camp quarters, notwithstanding that Paris is only thirty miles away.

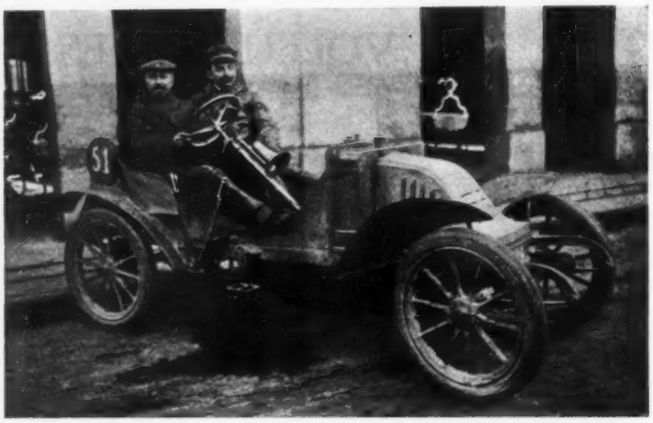
Six competitors went out on the second day, the trouble being broken gasoline tank, broken cotter pin on a universal joint and resulting complications, broken wrist pin, broken clutch shaft, seized clutch, and one collision. Fifty cars and eleven teams were left to fight for the voiturette trophy. An example of the French system of making rules, to break them, was furnished when one of the competitors was delayed for a couple of hours owing to mechanical troubles. To regain his lost position he had to cover about one hundred miles at an average of thirty-seven per; the single-lunger was only capable of thirty-six miles an hour and consequently arrived a few minutes after the closing of the doors. The rules declared that disqualification would be imposed for exceeding the twenty-four-mile limit.

PREPARING FOR START OF RUNABOUT TOUR ON TWENTY-ONE-MILE BARRICADED CIRCUIT GUARDED BY EIGHT HUNDRED TROOPS.

Three more cars went out on the third day, reducing the competitors to 47, the cause of the abandonment being leaky radiator and seized cylinder; leaky radiator, and a smashed car through missing the turn. Despite the warnings given by officials and the example of those who have succumbed, a majority of the drivers persist in rushing round the course at excessive speed.

Michelin, Dunlop, Continental, and Hutchinson have the stands on the course, but up to the end of the second day had not changed a single tire.

Judging from the characteristics of the sixty-seven runabouts entered for this competition, French constructors are of opinion that the correct thing for a popular two-seater, selling between $500 and $600, is a single lunger. Fifty-nine have single cylinders, and eight only are equipped with two-cylinder engines.



ONE-LUNGER BUILT TO RESEMBLE RENAULT RACER.

In every case the cylinders are vertical and carried forward under a bonnet, French ideas of propriety being distinctly against horizontal, double opposed, and engines carried under the body. In last year's test the bore was limited to 120 millimeters, but this year, with one or two exceptions, the bore and stroke of the single cylinders is 3.9 by 4.7, conservatively rated here by some of the makers as 4 1-2 horsepower. Cone clutch and shaft drive predominate, there being but one example of friction disk, and about four cars with side chains. Sliding gears are general, half a dozen of the cars having the luxury of selective type. Ignition by high-tension magneto is the rule, such well-known magnetos as Bosch, Eisemann, Gianoli, and Nilmelior being found on nearly 90 per cent. of the machines. There is but one set of dry batteries in the lot and less than a dozen storage batteries.

While half the cars are fully equipped as sold to the public, the other half are more or less stripped, and some have been modified to give them the appearance of racers. The Passe-Partout team, which ordinarily has a certain resemblance to the Renault, has been modeled closely, by special permission from Louis Renault, to look as much like an offshoot of the Grand Prix racer as possible. The same idea has been carried out with other well-known French racers as models.

AUTO NEWS FROM GERMANY.

BERLIN, Oct. 30.—A plan that has found much favor is the introduction of a Russo-Prussian autobus line over the frontier, after the idea of extending the railway from Memel into Russia met with severe opposition from the Prussia Government. A Courland company thereupon approached both Governments as to the advisability of running passenger and goods autos on the Libau-Memel route and received much encouragement from both sides. The chief difficulty is the duty question on the frontier, but it is believed that this will be easily overcome.

Boris Loutzky's marvellous 500-horsepower boat, the Zariza, is just now the main theme of conversation in German circles since its remarkable performances at the Rhine Regatta, when it traveled from Coblence to Düsseldorf at a mean speed of 51 kilometers per hour and covered the first stretch from Coblence to Cologne, 97 kilometers, in 1 3-4 hours. Herr Loutzky is one of Russia's most prominent naval engineers and is working at the celebrated Kiel Howaldt Works

South Germany has not yet given up hopes of having the German autodrome in the Taunus after all, although the powers favor the Eifel project. The Frankfort Automobile Club called a meeting last week, which was largely attended, and named two delegates who are to put their view of the question once again before the Imperial Automobile Club, pointing out in the first place that by erecting the track in the western corner of the Fatherland, France and Belgium would profit almost more than those intended to principally benefit by the scheme, the German manufacturers.

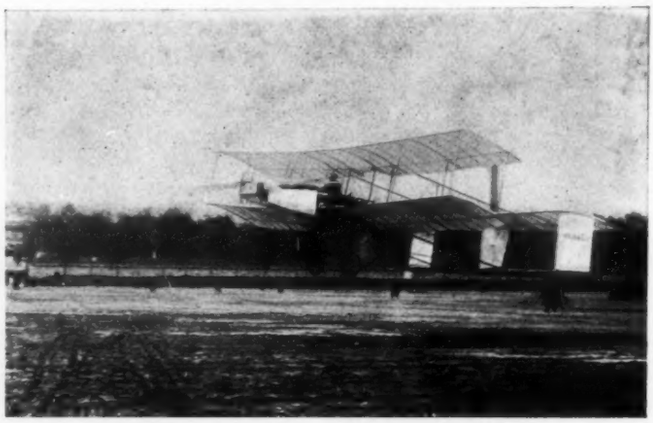
FARMAN'S AEROPLANE FLIES 2,529 FEET.

PARIS, Oct. 26.—Henri Farman, a prominent figure in the automobile world during pioneer days, has succeeded in lowering Santos-Dumont's aeroplane record of 721 feet by a flight of 2,529 feet. The aerial trip was made on the open military ground at Issy-les-Moulineaux, near Paris, in the presence of a large number of spectators. After a few preliminary runs against the fresh southwest wind, Farman started his 50-horsepower Antoinette motor again and rushed over the ground at twenty miles an hour. After a sprint of one hundred yards the front horizontal rudder was raised to a slight angle and the big machine lifted into the air to a height of nearly ten feet. The rudders were skillfully adjusted and it was at this height that the official measurement was taken by representatives of the Aero Club of France. The official time for the flight is announced as fifty-three seconds. Farman has made at least half a dozen flights of over six hundred feet during the past ten days, each one in the presence of a large number of spectators. No attempt is made at secrecy, his training ground being an open field used by the artillery brigades and open to the gaze of all passersby. Santos-Dumont and Wilbur Wright are among those who have witnessed the flights.

Henri Farman's record-breaking aeroplane has few new principles, its designer having simply sought to work on the lines of Delagrange, Santos-Dumont and others, and modify details. It consists of a forward cell 33 feet in width united to a rear cell of about 20 feet. A couple of bicycle wheels under the forward cellular planes and one under the rear planes serve to support the machine on the ground for the initial speed of twenty miles an hour necessary to obtain flight. The Antoinette 50-horsepower motor is carried on the forward plane, where it drives a two-bladed propeller calculated to propel the machine at a speed of 32 miles an hour. The eight-cylinder engine is of the latest model with water-cooled cylinders.

SANTOS-DUMONT HYDROPLANE HAS SETBACK.

PARIS, Oct. 26.—Santos-Dumont has launched his novel hydroplane, designed to attain a speed of over sixty miles an hour, but failed to create a very good impression in the first tests on the Seine, near Paris. With minute care the tender machine was placed in the water. Santos-Dumont, attired in a leather suit, took his place behind the steering wheel at the end of the central cigar and the curious craft was towed out to midstream. The sixteen-cylinder motor was new and could only be started up after a long delay. When the three-bladed propeller finally did begin to revolve the boat traveled 350 yards, then came to a dead stop. Even when under way the craft seemed lifeless and refused to glide over the surface as her designer had expected. After an hour the boat was withdrawn, Santos-Dumont declaring that failure was due to the engine turning only at 800 revolutions instead of 1,500. Before making any further attempts on water, he will carefully tune up the engine, being convinced that with sufficient power he can travel 60 miles an hour.



FARMAN AEROPLANE IN ITS RECORD HALF-MILE FLIGHT.

LETTERS INTERESTING AND INSTRUCTIVE

HOW MUCH POWER IS USED IN TURNING OVER?

Editor THE AUTOMOBILE:

[951.]—Will you please inform me, either through "Letters Interesting and Instructive," or otherwise, the horsepower or fraction thereof required to produce a revolution of a 50-horsepower gasoline motor? Would the compression per square inch affect this figure; in other words, would it require greater power to produce a revolution of a 40-horsepower motor with, say, 70 pounds compression to the square inch, than a 50-horsepower motor with perhaps only 60 pounds compression to the square inch? H. C. ARNOLD.

South Framingham, Mass.

It has been found by extensive experiment and investigation that the horsepower consumed by a well-built steam engine of the simple type, in overcoming the friction of its own moving parts, is about 5 per cent. of the total power generated. With the exception of the factor of compression, this may doubtless be found equally applicable to the internal combustion motor, though the latter has an advantage in this respect over the steam engine in that it has no glands or stuffing boxes on its moving parts. If we assume this as a basis for calculation, also that the 50-horsepower motor is well built and properly balanced, it will follow that 2.50 horsepower are consumed in turning the engine over when running at its full capacity, although it has been established that the friction in an engine is practically constant at all loads. However, it naturally increases rapidly with the speed, but it may be assumed that the motor in question turns over at the rate of 1,000 r. p. m. when running under full load. Then the power consumed per revolution in turning such an engine over would be $\frac{2.50}{1000} = .0025$ horsepower. This ignores the factor of compression completely. It naturally requires more power to compress a given volume to 70 pounds pressure than it does to 60 pounds, but the comparison you make involves differing volumes, or at least may be assumed to do so owing to the difference in the power of the motors. As the term horsepower involves three essential factors, *viz.*, m. e. p., or mean effective pressure throughout the stroke; area of piston acted upon and the speed of piston travel, it may be that the 50-horsepower motor would require less power to turn over per revolution than the smaller one, though this does not naturally follow. If, through errors of design, it was necessary to compress the same volume in the smaller motor to 70 pounds per square inch to obtain 40 horsepower, as was employed in the larger motor to give 50 horsepower at 60 pounds pressure, it is obvious that more power was being wasted in the smaller motor and it would consequently require more per revolution.

CONCERNING VALVE-GRINDING AND RESEATING.

Editor THE AUTOMOBILE:

[952.]—Some time in the past year you had an article in "The Automobile" about grinding and reseating valves. Will you kindly give me the date of the issue in which this article appeared, and very much oblige? J. B. SEEGER.

Dallas, Tex.

We do not recall that any extended article on this subject appeared in THE AUTOMOBILE during 1906. The only thing of the kind revealed by our index is entitled "A Wrinkle in Grinding Valves," in the issue of August 23, 1906. This was merely a paragraph and advocated the use of a piece of emery cloth in the shape of a disk slightly larger than the diameter of the head of the valve, a small hole being made through the center of the disk to pass the valve stem. This expedient is recommended where pitting is to be removed and is followed by the usual grinding in with flour emery and oil. We do not know of anything else that appeared on this subject during the period in question, but would be pleased to help you out through this department to the extent of our ability.

CRANKSHAFT DESIGN IN TWO-CYLINDER MOTOR.

Editor THE AUTOMOBILE:

[953.]—Would you be kind enough to inform me through the columns of your paper what the serious objections are to having two cranks on a two-cylinder upright engine on the same line with each other, so that there would be an impulse every revolution, instead of two impulses one revolution and none the next, which is the case with cranks opposite? Of course, I recognize the fact that the pistons, rods, and cranks are unbalanced, but would not the heavy flywheel which is necessary to carry the engine over one complete revolution take care of this and one impulse every revolution would make a more powerful and less jerky motor? Did you or any of your many readers ever have any experience with a crankshaft made this way? CURIOUS.

Brooklyn, N. Y.

The chief objection to building a two-cylinder motor with this type of crankshaft is to be found in the fact that it is impossible to accurately balance it mechanically, and this is found to be of more importance than the impulse balance. However, such motors are not as rare as your question would seem to imply. In fact, most stationary motors are built in this way and a great many automobile engines have also been equipped with crankshafts having the pins in the same plane, the 180-degree placing having been an exception up to within quite recently. The latter offers greater advantages for automobile work, as it obviates the necessity of providing heavy counter-balance weights, and even with these an accurate mechanical balance is not obtainable. The flywheel does not compensate for this entirely, while it does tide the motor over the idle interval very effectively and there is no jerky effect such as you imagine, the power being unaffected in either case. You will find in the two-cylinder Brush runabout an example of this type, but special pains have been taken to balance the motor by providing a counter-weight on an auxiliary shaft.

"WHY SO MUCH 'KNOCKING' IN THE AUTO TRADE?"

Editor THE AUTOMOBILE:

[954.]—I want an automobile and have wanted one for a long time, but the dealers have kept me from buying, and I have no doubt they keep a good many would-be purchasers from buying in the same way. For instance, I like the looks of the Reo and when I tell the Maxwell agent this he says, "You make a big mistake in buying a one-lunger. The minute that one cylinder goes out, you are done for. Take my advice and get a two-cylinder car." I go to the repair man and ask him if the Ford isn't a good little car. He says they are in the shop all the time and the cost of upkeep is very high. The repair man recommends some other car, and when I ask some one in regard to the make, he promptly "knocks" it and urges me to buy something else. I have about come to the conclusion that all cars are either junk or else all the trade are liars. Why it it that there is so much knocking in the automobile business? Many a man is kept from buying a small car through the talk given him by the trade of the awful size of the repair bills he must expect. Now, in view of the accounts published by owners of the steady service given by their cars, either these accounts are fabrications or else the trade is doing a lot of costly knocking. It is to be presumed that the dealers want to sell as many cars as possible, therefore, why don't they try to interest a prospective autoist by telling him that the car he favors is a very reliable car, but that he believes the car he represents would be more suitable. In this way, some one would sell the man a car and make one more convert for good roads—a thing much desired by all. Is it really true that, no matter how carefully it is handled, all cars require constant repairing and replacements? Looks to me from the dealers' talk that the first cost isn't anything compared to the cost of upkeep. H. E. REKOOT.

San Francisco, Cal.

We heartily agree with you that the practice of "knocking" the other fellow's car at every opportunity which prevails is much to be deplored. Unless he be so credulous as to gulp such statements entire, it belittles the dealer in the prospective buyer's eyes and when oft repeated is apt to disgust him entirely. It is not confined to the automobile business by any means, but as you say, it is an extremely shortsighted policy that does an infinite amount of harm—to the dealer himself, in the first instance, and

to the cause of automobiling and good roads ultimately. When a man is trying to sell you cabbages, or what not, he does not take pains to tell you that his wares are rotten, and the other fellow's the best in the world; it is the other way round, and in the last analysis it is merely human nature. The seller invariably puffs his own goods and deprecates the idea of buying from anyone but himself. But take some of the loudest of these "knockers" to task and ask him to substantiate his accusations; in nine cases out of ten he has absolutely nothing to back his statements but his own anxious desire to make a sale. While this is commendable, selling goods at the cost of belittling and berating the goods of his competitor is far from it.

All cars and all machinery require repairs and replacements, but this need should be far from constant, if they be properly taken care of, nor should the expense of maintaining any of the cars you mention exceed 10 to 15 per cent. of their first cost during the first year. There are any number of cases where it has not been 5 per cent., or even less. The accounts published from time to time of moderate upkeep expenses are not imaginary, often being substantiated by verification before a notary and being the actual experiences of autoists who take care of their own cars the year round. All cars go wrong at times, and any car, recklessly and improvidently handled, will run up a pretty bill of expenses. One or two such instances may form the foundation for a tremendous amount of the "knocking," but the very dealers who have been doing it were, at the same time, concealing skeletons as bad, if not worse, in their own closets.

RELATIVE EFFICIENCY OF TWO AND FOUR-CYCLE.

Editor THE AUTOMOBILE:

[955.]—Will you please give me some information concerning the relative efficiencies of the two and four-cycle gasoline motors? What are the chief objections to the use of the auxiliary exhaust port in a four-cycle motor? Has the carbon which is contained in gasoline or kindred fuels any value as a power factor in the operation of an explosion motor? Can you give any more information concerning the double acting motor described on page 96 in "The Automobile," July 18 issue? Although living in the same city (Denver, Colo.) as the address of the Fish Gas Engine Company, I am unable to locate them or anything connected with the creators of this seemingly nine-day-wonder, which to the skeptical-minded certainly looks "fishy," at least. G. I. PETERSON.

Denver, Colo.

We believe that carefully conducted tests have shown the relative efficiency of the two and four-cycle engines to be about 10 per cent. in favor of the four-cycle.

We do not know that there are any serious objections apart from the additional mechanism involved, as it is necessary to open the valves of an auxiliary exhaust positively.

Carbon is the basic combustible element in practically all fuels, whether liquid or solid. Gasoline and similar fuels are hydro-carbons, meaning that they consist principally of hydrogen and carbon.

We have no further data concerning the motor in question than appeared in the description you referred to, but the names of the builders were given there, and we believe addressing them at Paris, France, or care of one of the French papers, such as *L'Auto*, would reach them.

We cannot help you out on the last question as the only information we had on the matter was contained in the communication of our correspondent.

CREDIT FOR THE FIRST SIX-CYLINDER.

Editor THE AUTOMOBILE:

[956.]—There is a great deal of talk going the rounds, edited by various factory representatives, agents, etc., claiming in each case that the credit of having produced the first six-cylinder automobile in America belongs to the particular company with which they are at the time connected. To those who know some facts in connection with the past production of the six-cylinder motor, the many claims emanating from the hustling agents bring forth a series of "rippling smiles!"

There are many who claim the added complications of the six do not offset the claim for greater elasticity made for it, etc. Here is the difference in figures, showing just how much more elastic the six-cylinder engine is over the four-cylinder, as ascertained by actual running, which, after all, is the only convincing proof. The six-cylinder car can be throttled down to 3 3-4 miles an hour. The four-cylinder car can be throttled down to four miles an hour on high gear. The difference in one hour's running is 1-4 mile. At this game, is there much gained? The pulsation of the four-cylinder motor is no more perceptible to the passengers at four miles an hour than it is to the passengers in a six-cylinder at 3 3-4 miles an hour; the riding qualities are the same.

Another natural source or productive cause of easier riding claimed for the new sixes has arisen in the enforced increase of wheelbase, due to the room demanded to take care of the six cylinders. There are manufacturers of fours that have always made it a point to give a generous wheelbase. There is nothing so conducive to easy riding as a long wheelbase.

At ten miles the 1908 four-cylinder, long wheelbase car runs every inch as smoothly, as quietly, as any six-cylinder, with the added virtue of having fewer working parts. It has been a struggle to reduce the number of working parts in the modern auto. In the fours it has been accomplished; in the sixes, the working parts have been increased. It is a situation taken in at a glance by either the expert mechanical genius or the layman.

To go back to the question, "To whom should the credit go for the production of the first six-cylinder car in America?" don't all speak at once! One at a time, please! Was it Winton? Was it the Pierce Company? Was it the Oldsmobile? No! Well, then, who was it?

In 1904, at the Madison Square Garden show, the E. R. Thomas Motor Company had on exhibition a six-cylinder chassis which had been run successfully, and was offered for sale at $6,000, and was rated at 60-horsepower. At that time there was no purchaser; the idea was too much for the embryonic automobilist of that day.

After a lingering state of coma in New York, the "Big Six" was returned to the factory, and was next heard from when M. Roberts, Harry S. Houpt's driver, qualified with it in the Vanderbilt race, on the Long Island course in 1905, making good time.

We will permit the reader to judge for himself. "Who produced and offered for sale the first six-cylinder car in America?"

S. F. Edge, the English champion of the six-cylinder car, followed Mr. Thomas' footsteps one year later. FRED J. TITUS.

Newark, N. J.

WHAT ONE OHIO BUGGYABOUT DID.

Editor THE AUTOMOBILE:

[957.]—A few words may not be amiss regarding the Hatfield buggyabout, and what it will do when called upon.

October 10, Mr. Hatfield, Sr., and Mr. Zent, the master-mechanic of the Hatfield Motor Vehicle Company, left Miamisburg, Ohio, at 8:30 a. m. and arrived in Cincinnati at 11:15 a. m.—a distance of 49 1-2 miles. This trip was made without a stop of any kind, and every hill, with the exception of two, were taken on the highest speed. The roads were very heavy and muddy, and, as every one who is familiar with the country knows, it is a miserable proposition for automobiles.

After arriving in Cincinnati, Mr. Zent and a member of the Chas. Behlen Son's Company ran down to the river front and then ran straight up the hill and then up to the top of the Vine street hill, and also took in McMicken avenue. To any one who is familiar with the streets of Cincinnati and its cobblestone pavements it will appear that the car does all it should do. One hill climbed in Cincinnati we consider the worst hill in the State of Ohio.

On the unlucky day of the thirteenth of October, C. B. Hatfield, Jr., secretary and treasurer of the company, accompanied by Clay T. Vance, vice-president, drove the Hatfield buggyabout from New York City to Camden, N. J.—102 miles—in 5 hours 40 minutes, without a stop, having been obliged to slow down to the rate of seven miles an hour through seventeen towns. In the very near future a record run from Miamisburg to Indianapolis, Ind., will be made by the way of Dayton, Ohio—a distance of 122 miles.

Miamisburg, Ohio. C. B. HATFIELD.

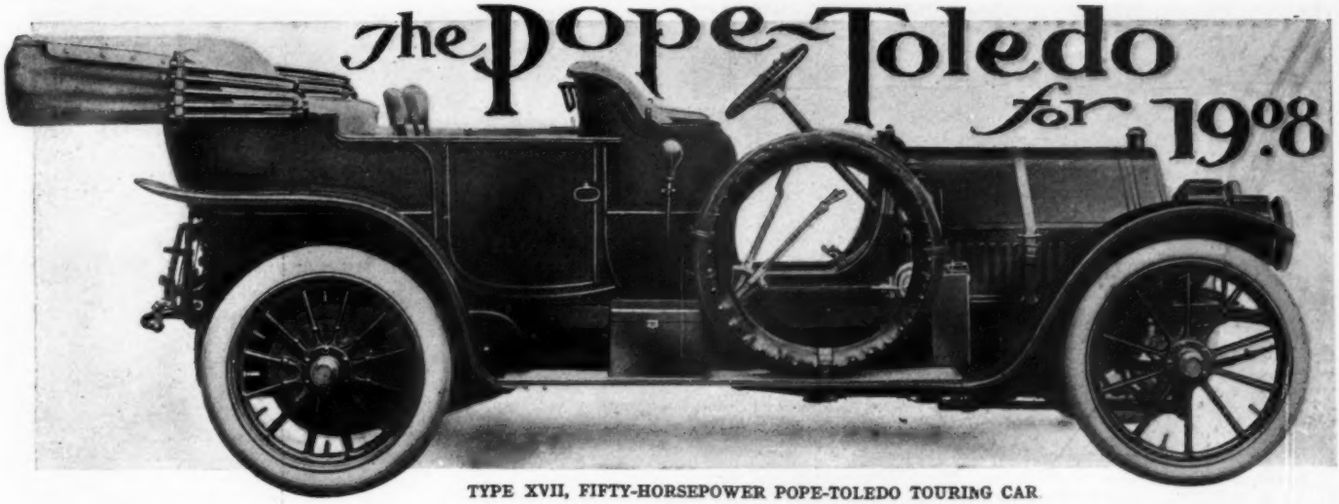
FOR THOSE TOURING INTO CANADA.

Editor THE AUTOMOBILE:

[958.]—Some three weeks ago I telephoned you for information as to the proper person to whom I could apply at Rouse's Point for the papers and license necessary in taking my automobile into Canada. I write to thank you for the trouble you took in the matter, and to say that, from my experience, F. W. Myers & Co., of Rouse's Point, N. Y., are a firm to whom you can refer any automobilist, with the assurance that he will receive prompt and courteous attention. If he owns an imported machine, have him obtain a certificate from the collector of the port of entry that duty was paid, as he will need it at the Canadian line. MACOMB G. FOSTER.

New York City.

The Pope-Toledo for 1908



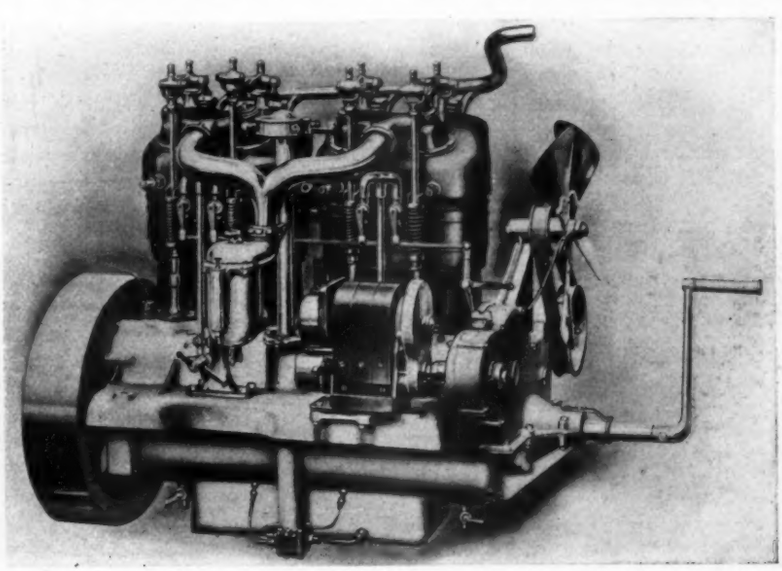
TYPE XVII, FIFTY-HORSEPOWER POPE-TOLEDO TOURING CAR.

POPE-TOLEDO practice as exemplified by the new Type XVII, 50-horsepower car, which will be one of the representatives of the line for 1908 made by the Pope Motor Car Company, Toledo, O., is characterized throughout by the many numerous special features of design and construction which have been identified with it for the past two years. The motor is distinguished by the use of copper water-jackets surrounding the twin cylinder castings and large valves set at an angle in the cylinder heads and operated by walking beams from the single camshaft and set of cams. The exhaust valves are operated by individual springs, while the inlet valves are provided with supplementary stems, which can be removed for adjustment or replaced, thus preventing any danger of having the valves thrown out of alignment by reason of a warped stem. Specially treated chrome nickel steel is the material employed for the crankshaft, wristpins and connecting-rods, the first-named being supported on three liberal-sized D. W. F. annular ball bearings.

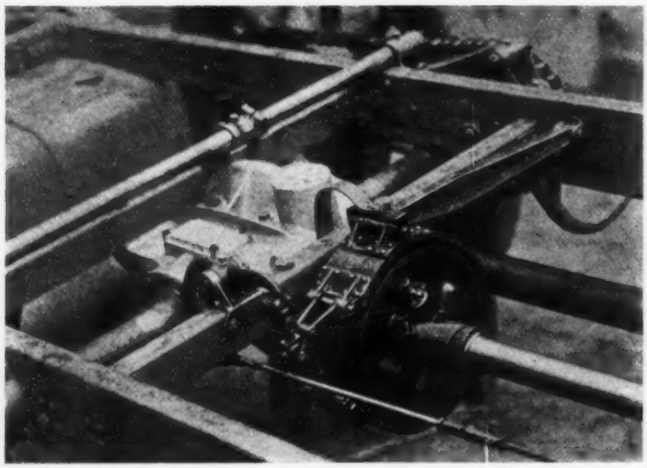
Motor Accessories.—In accordance with recognized standard practice on the highest grade cars, dual ignition is fitted, an Eisemann high-tension magneto and non-vibrating coil being provided to take care of the running side of the duplicate system, while a standard four-unit coil and accumulator set with primary timer run by the motor complete the other side. Instead of being placed on the dash as usual, the coils are carried under the front seat of the car, while the accumulators are housed in a special steel case carried on the running board. Either system can be used independently or both together, and the purchaser is given an option of the Bosch high-tension magneto for the running side where this make is preferred.

The carbureter is an exclusive Pope-Toledo design and is of the annular float type, insuring a constant supply of fuel regardless of the position of the car. While the main fuel supply is maintained by means of an ingenious pressure system in which a simple pump automatically operated by the exhaust pressure raises the gasoline from the 26-gallon copper tank at the rear of the car, the feed to the carbureter is on the gravity principle. This is accomplished by placing an auxiliary one-gallon tank on the dash, in which the fuel is kept at a constant level as long as the car is running. An auxiliary hand-pump is provided for emergencies, none being required for starting, as in the usual pressure system, owing to the supply in the small tank. The carbureter has a wide range of flexibility and will run the motor from about 200 r.p.m. to 1,200 r. p. m. with great efficiency. The water pump is centrifugal and gear-driven, carried on the forward end of the engine, and has a liberal capacity. It supplies the special "planetic" radiator of exclusive design and which is made in the home plant. This is of novel principle and construction and gives a high efficiency, thus necessitating a minimum quantity of water. A high filling thimble and a hard rubber vulcanized cap lined with brass are fitted, the latter being convenient to handle while the former prevents the hot water from siphoning from the radiator. Lubrication is of the continuous circulating type, using a gear pump run from the camshaft and a three-gallon tank.

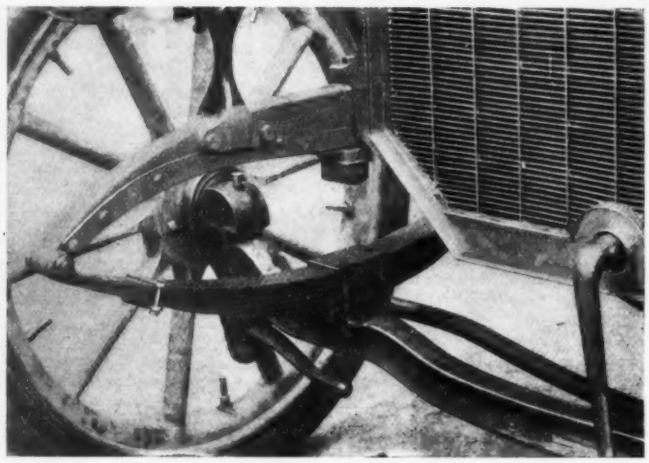
Transmission Essentials.—The first step in the transmission of the power consists of a multiple-disk clutch of special design, and which, contrary to usual practice where this essential is concerned, is encased in the same housing as the gear-set instead of being made a part of the flywheel. Packing joints providing with gland nuts are placed between the case holding the change-speed gear and the clutch and between the clutch and the outer end of the shaft, thus making the clutch case absolutely oil-tight. The number of disks has been reduced and their shape changed as well, permitting quicker action while still retaining the extremely smooth operation of this type. Hand holes have been provided for examination and oiling. The change-speed gear is of the sliding type with selective operation and provides four speeds forward, the direct drive being on the third. Chrome nickel steel is used entirely for both shafts and pinions, the former running on D. W. F. annular ball bearings of large size, the whole running in a liberal supply of oil. The entire clutch and gear-set unit is located directly back of the flywheel, which brings the former in a very accessible position beneath the



CAMSHAFT SIDE OF MOTOR, SHOWING CARBURETER AND MAGNETO.



POWERFUL CONSTRICTING BRAKE ON DRIVING SHAFT.



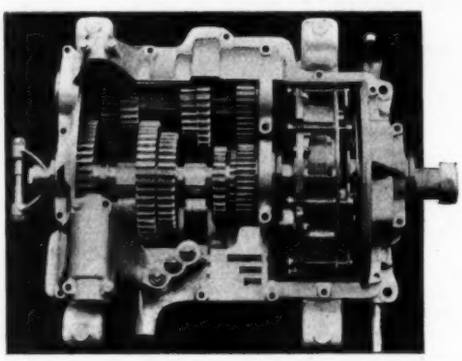
STEERING KNUCKLE AND RADIATOR CONSTRUCTION.

footboard; a large hand-hole and screw top are provided to permit access to the interior. The differential case on the center of the jackshaft has also been provided with liberal sized hand-holes for adjustment and lubrication. Final drive is by double side chains to the rear wheels, the chains themselves being of the silent type, the material employed being chrome nickel steel. The few disadvantages of this type of drive are entirely obviated by the provision of special chain cases, thus insuring cleanliness and efficient transmission of power at all times. Particular attention has been paid to making every part of the transmission, right from the flywheel back to the drivers, as accessible as possible, while still maintaining the highest standard of efficiency throughout.

Chassis and Running Gear.—The frame is of the inverted "U" type with reinforced edges that has long been a distinguishing feature of the Pope-Toledo design. It is amply stayed and braced by transverse members and gussets, the former carrying the transmission unit. The axles are of I-beam section of generous size and of chrome nickel steel, the front being provided with pivots and steering knuckles mounted on D. W. F. annular ball bearings, with hardened steel bushings and compression grease cups, an excellent idea of the construction of this part of the car, as well as of the special type of radiator employed, being illustrated in one of the accompanying photographs.

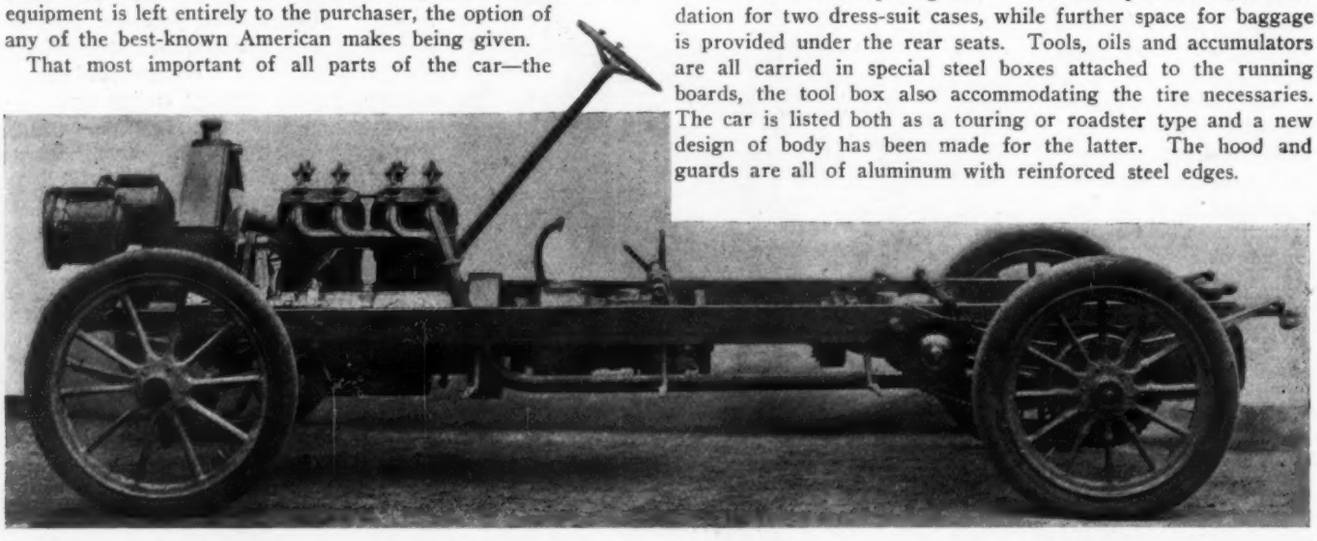
Thirty-six-inch artillery wheels shod with 4-inch tires front and 4 1-2-inch rear complete the running gear, and these, in connection with the liberal spring equipment, which is of the semi-elliptic type, provide extremely easy riding. The matter of tire equipment is left entirely to the purchaser, the option of any of the best-known American makes being given.

That most important of all parts of the car—the brake equipment—has come in for special attention, and it is doubtful if there are many cars on which it has been considered as of such extreme importance as on the Pope-Toledo. The running brakes are located in dust-proof drums on the rear wheels, being operated by a pedal which interlocks with both the clutch and the emergency brake hand lever on the side of the car. The emergency brake is of unusually powerful dimensions and is placed on the driving shaft between the gear-set and the differential. It is operated independently of the clutch by means of a second pedal, this arrangement facilitating restarting when stalled on a steep grade.



COMBINED CLUTCH AND GEAR-SET UNIT.

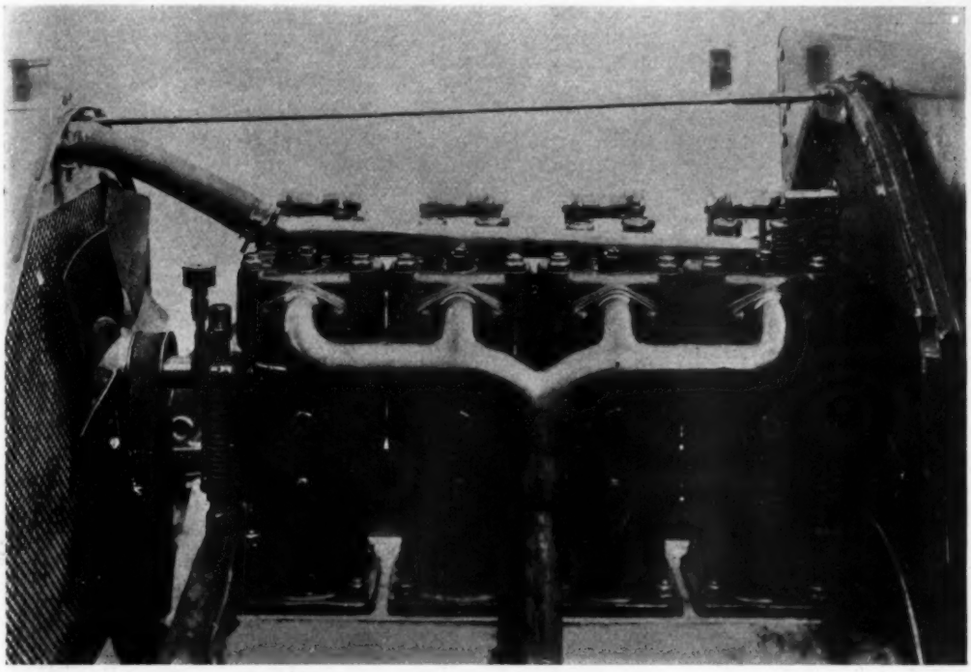
A pressed-steel body trimmed with Cuban sabique completes the car, a great deal of attention having been lavished on the body design with a view to providing the maximum of comfort and convenience for the passengers. A locker under the forward seats and opening into the tonneau provides accommodation for two dress-suit cases, while further space for baggage is provided under the rear seats. Tools, oils and accumulators are all carried in special steel boxes attached to the running boards, the tool box also accommodating the tire necessaries. The car is listed both as a touring or roadster type and a new design of body has been made for the latter. The hood and guards are all of aluminum with reinforced steel edges.



SIDE ELEVATION OF THE COMPLETE POPE-TOLEDO CHASSIS FROM THE EXHAUST SIDE OF MOTOR

CONCERNING THE KNOX WATER-COOLED MOTOR

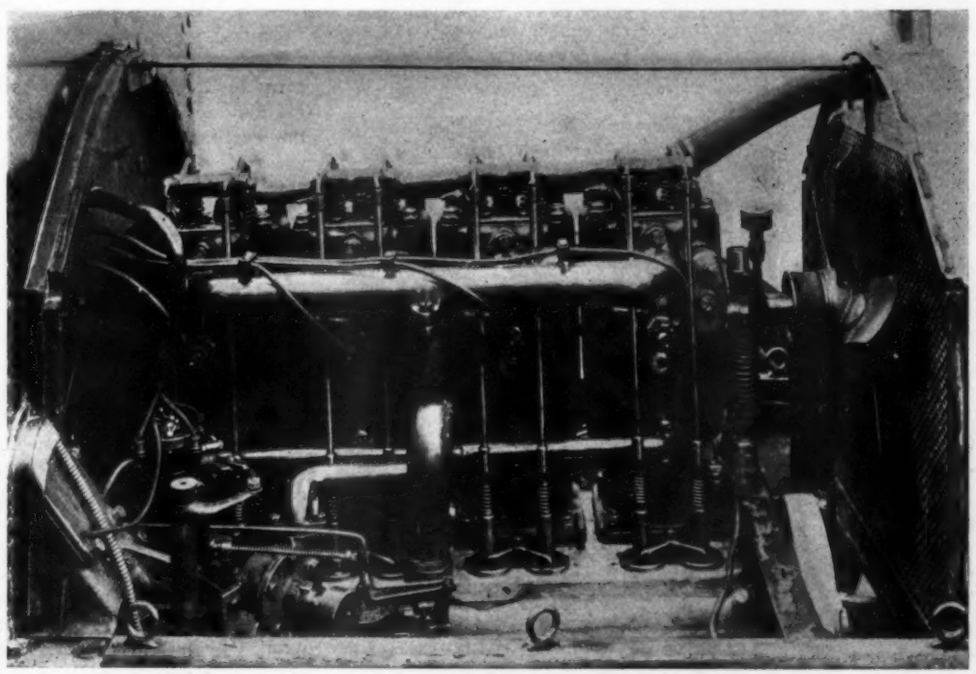
THOUGH in his first attempts the American maker followed the standards set up by previous stationary practice rather closely, he seldom went as far as adopting the two-piece cylinder construction that is still prevalent in that field. Instead, he made



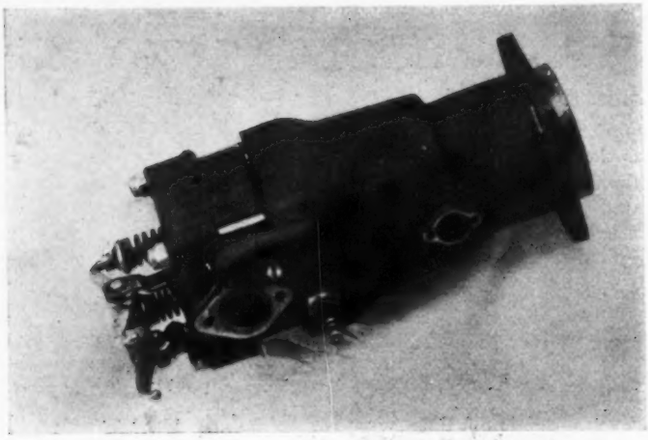
THE NEW KNOX MODEL L WATER-COOLED MOTOR FROM THE EXHAUST SIDE.

one-piece cylinder castings, and the latter have become practically universal in automobile motor practice, until now, the first signs of a tendency to return to former standards are revealed in the design of the Knox water-cooled engine, which forms the power-plant of the new Knox Model L car for 1908. So far as the car itself is concerned, it is a replica of those distinguishing features of design and construction that have long been identified as Knox standards and so may be said to depart little from the cars built by this concern — the Knox Automobile Company, Springfield, Mass., for several years past. The chief departure is naturally that of the adoption of water-cooling, and even in the design of the water-cooled motor, the same Knox standards that have become familiar on the air-cooled type of motor have been closely adhered to, so that, taken all in all, it is practically only in the provision of a radiator and the other essentials of water-cooling that the new motor differs.

When considered in detail, however, the motor itself is found to embody more than one instance of what may be termed advanced practice in that they make for simplicity, using this term both from the user's as well as the maker's point of view. The most prominent of these, as already mentioned, is the two-piece cylinder construction. Separate cylinders are employed as usual, each consisting of two castings, one forming the body of the cylinder and the other the head. The most noticeable thing about these castings, and it is a feature that overcomes the old and well-founded objections to the use of two-piece cylinders, is the fact that both the cylinder proper and the head have each an independent water-jacket, with very liberally proportioned water spaces. The cylinder jacket covers it entirely but is closed at the top, the inlet being at the bottom and the water again issuing at a point diagonally opposite. Thus there are no water joints which could occasion a leak into the cylinder. In machining the cylinder casting a counterbore is made at its upper end on the outside, leaving a protruding shoulder or ring. In assembling, an asbestos-copper gasket is placed on this shoulder and the correspondingly recessed cylinder head seated upon it. The valves seat directly in the head, no cages being employed, but instead of being placed in two lines as in the air-cooled motor, they are located on a single line lengthwise of the four units. Liberal provision for water is made in the head, the valve seats being cored in so that both



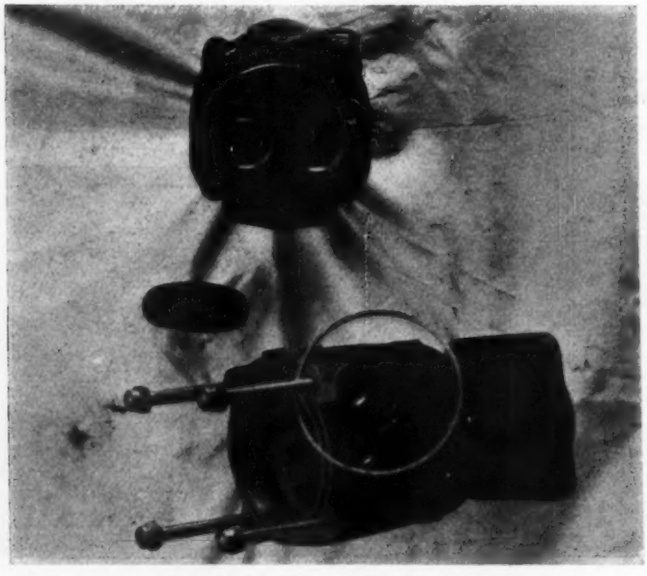
WORKING SIDE OF THE KNOX MOTOR, SHOWING VALVE MECHANISM AND CONNECTIONS.



CYLINDER AND VALVE ASSEMBLY OF THE NEW KNOX MOTOR.

are entirely surrounded by the circulating water. Although the jackets are entirely independent, the circulation is continuous, as the water, after rising through the cylinder jacket proper, is transferred to the head by means of a small U connection clamped on, the hot water issuing from the top of the head at the right side. This form of construction permits of machining the entire combustion space, besides making a much simpler casting. Shoulders are cast on each corner of the cylinder proper, and into holes tapped in these, studs are screwed. The latter coincide with holes drilled in the cylinder heads which are held down by four nuts, it being impossible to bring the parts together without a correct bearing. The valve mechanism is all on the right-hand side of the motor and is actuated by a single camshaft. The engine design is such throughout that the air-cooled cylinders may be substituted with little difficulty.

The advantages of this form of construction will be apparent at a glance. The head may be removed merely by taking off four nuts, thus giving access to the entire interior of the combustion chamber and making the task of cleaning the latter of carbon deposits quite an easy matter when compared with the standard type, in which the entire cylinder must be lifted from the crank-case. It also facilitates grinding in the valves and this may be done without any danger of having the grinding compound get into the cylinder. Disconnecting the big end of the connecting rod permits of the ready removal of the piston for inspection and also makes it a far easier matter to reinsert the latter with its rings when reassembling the motor.



ESSENTIALS OF THE KNOX WATER-COOLED CYLINDER.

ALL KINDS OF AUTO MAKING IN MICHIGAN.

Tolmy Hill, of Cherry Valley township, Lake county, Mich., has invented an automobile more wonderful than Holmes' wonderful one-horse shay. He has just been exhibiting his machine at one of the Michigan fairs, and "By heck," it goes.

The specifications of this new model of horseless carriage are: A second-hand brake wheel; a second-hand ice cream freezer, constituting a water tank for cooling the engine; a second-hand gasoline can; a second-hand marine engine; a new "sparker" costing $21; a second-hand set of farm wagon wheels; a second-hand set of gears from a marl mixer, and a miscellaneous assortment of junk, all second-hand.

Does she go? You'd better guess. One facetious spectator at the trial test said that she made six miles a week. But the judges' stop watches showed a mile in 8.76 minutes. There are three speeds to this latest type of auto, three, eight, and fifteen miles an hour, though Mr. Hill admits he has tried the fifteen-mile gear only once.

"She splashed water all over me then," said he, "but she went two miles at that clip."

At the last fair which he visited this carriage had the honor of carrying several notables around the race track, including

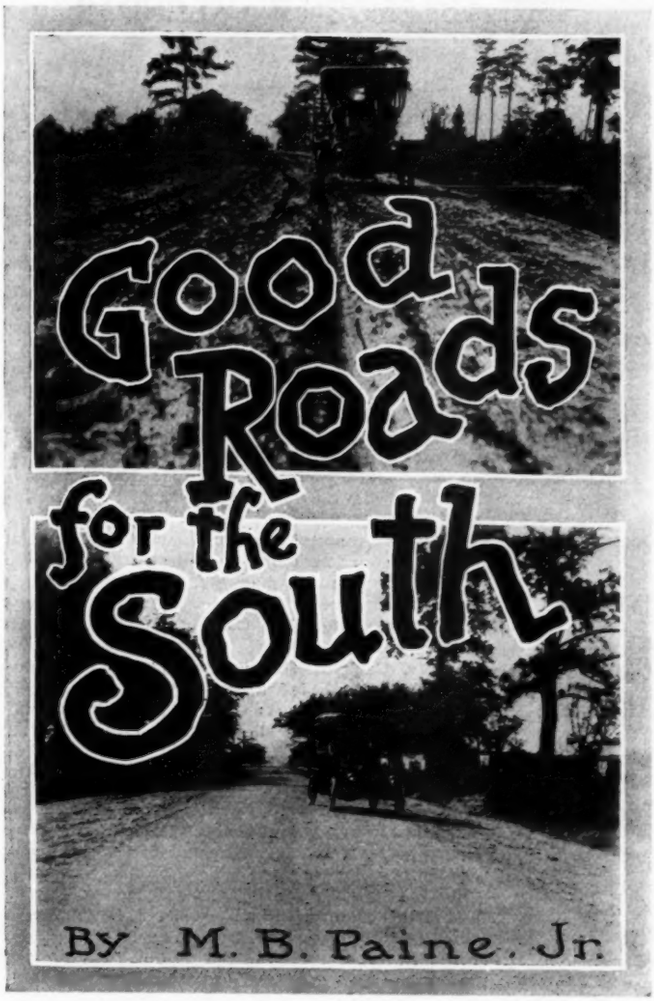
TOLMY HILL, OF CHERRY VALLEY, MICH., AND HIS CAR.

Governor Warner, Lieutenant-Governor Kelley and Congressman Townsend. He made it in 8.76 flat, amid the cheers of the crowd.

Tolmy Hill, the author of this contraption, is an old man who earns his livelihood by working in the marl mill at Marlborough. He may not be a millionaire, but he has a mighty good time in the world, and the assembling of the parts to his 1908 model has been one of his greatest pleasures. "And, by heck, she runs."

HOW A MOTORPHOBE JUDGE WENT WRONG.

ALBANY, N. Y., Oct. 21.—That prejudice may sometimes overreach itself to its own undoing, has seldom been better illustrated than in the case of Justice J. P. Van Ness, of the Court of Special Sessions, East Greenbush, who has achieved considerable of a local reputation as a motorphobe. Howard A. De-Graaf was arrested for exceeding the speed limit on October 28, 1906. He was taken before Van Ness, sitting as a justice of the peace, and fined $25, which he refused to pay, giving $100 security to appear before the same justice sitting in the Court of Special Sessions several days later. He was there fined $100, and again refused to pay it, taking an appeal. Under the Code of Criminal Procedure, the jurisdiction of this court does not extend to fines in excess of $50, although the Motor Vehicle Law authorizes a fine to that amount. Justice Tierney, sitting in the Rensselaer County Court, has just reversed the decision on this ground, and as the Court of Special Sessions is not a court of record, there is no provision in the code for remitting a case to it for retrial on reversal, and De Graaf escapes.



TWO VIEWS OF THE SOUTH CAROLINA STATE HIGHWAY.

The upper picture shows the sand bed which belied the name of road, and the lower view shows the same course after improvements were completed.

CHARLESTON, S. C., Nov. 4.—As the result of much agitation in the form of automobile runs, petitions and public mass meetings, thus bringing to the notice of the authorities the poor condition of the roads around Charleston, the people of this county have succeeded in getting an appropriation and the right to use convict labor to convert the present sand beds called roads into modern macadam highways.

In January last the State Legislature elected a committee of prominent men to act as special highway commissioners, and the first move of the commission was to plan and lay out a fine highway to Summerville, the well-known winter tourist resort, about 25 miles from Charleston. Three routes were available, and after careful consideration of their advantages as set forth by those interested in each route, the making of many auto trips over each, and close studying of the actual surveys of each route, the committee chose the original State road going over to Summerville by way of Otranto. This road for miles has long held the reputation of being the worst sand bed in this section, and has taxed the ability of more than one car in passing through it.

In choosing the best materials and methods to build the road, the committee received valuable assistance from the United States naval station, situated on the Cooper river at Charleston, Commandant Dyer having made extensive experiments in that line in building the roads through the United States Government reservation. Augusta gravel or cement gravel, a natural mixture of clay, pebbles and coarse gravel, was chosen, this having given much satisfaction in Georgia at Savannah and other places, and having shown the best tests here.

The new road runs straight north from Charleston by way of Meeting street, considerable progress in the building of it having been made already, so that by next Spring it is expected that visiting autoists and tourists at Summerville will be able to run to Charleston over a beautiful highway through the fragrant pinelands and at as high a speed as they can reasonably wish. The committee is now contemplating the plans of improvement on the other roads leading to the rich truck farming districts, and to the great sea island cotton centers, so that in a few years this country will have many miles of fine roadway.

The autoists in this section, having become a very strong factor, are to be thanked for this good roads agitation. The percentage of automobiles in Charleston has increased 200 per cent. in the last eight months, and over 100 have taken out licenses with the clerk of the court. There are more than 100 automobiles in Charleston, but only this number has been registered. In a few months, at the present rate of increase, there may be 200 machines registered.

COLUMBIA AUTOISTS FOR GOOD ROADS.

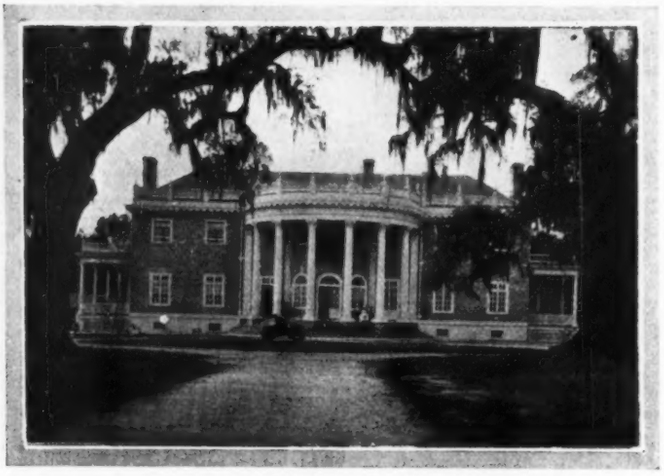
COLUMBIA, S. C., Nov. 4.—An automobile organization for the improvement of roads in Richland county was recently organized at a meeting of automobilists at the Ridgewood Club. The meeting was very largely attended, and there was a general discussion, which culminated in the formation of a permanent organization with the following board of officers: President, E. M. Whaley; vice-president, G. M. Berry; secretary, W. C. Swaffield; treasurer, T. H. Meighan.

F. H. Hyatt made an address on the necessity for road improvement and advised the appointment of a committee to work in harmony with the general organization recently formed in Columbia for road improvement in the county, and President Whaley, Secretary Swaffield and H. D. Lorick were named such a committee to appear before the grand jury and invite that body to take a ride over some of the roads in order to better understand their condition. A committee on constitution and by-laws consisting of R. L. Moore, B. F. McMasters, S. M. Harman, C. M. Lide and C. T. Jones was appointed.

TEXAS AUTOISTS WORKING FOR HIGHWAYS.

BEAUMONT, TEX., Nov. 2.—Arrangements have been completed by a number of representative citizens owning automobiles in this city with J. C. Chaney, the county commissioner, under authorization from the county commissioners' court, for grading, putting in abutments to bridges, and otherwise improving the

HOUSE AND GROUNDS OF CHARLESTON COUNTRY CLUB.



THE OAKS—A COUNTRY HOME NEAR CHARLESTON, S. C.

Collier's Ferry road, leading from the city limits to Collier's Ferry, where the Beaumont Country Club has its house.

Under the arrangement which has been made, the county will defray one-half the cost of the improvements, and the other half is to be paid by the automobilists, who will be greatly benefited by the work. A liberal amount of money has already been subscribed, and work has been commenced by the contractors.

GOOD ROADS TALK ALONG THE MISSISSIPPI.

MEMPHIS, TENN., Nov. 4.—In spite of the fact that roads in this section of the country, and particularly from here southward, are as far from being what they should as it is possible to imagine, and still dignify them by the name of highways, the interest in automobiles and automobiling has been experiencing a marvelous growth during the past two years. As is the case wherever the automobile takes hold, the talk of good roads immediately becomes prevalent and there is every prospect that the benefit of its influence will soon begin to assume definite form. Local organizations do their utmost to further the movement, but naturally their capacity in this direction is limited, usually being confined to roads in the immediate neighborhood. Among the numerous projects in the way of road improvement is the proposal to utilize the tops of the levees along the Mississippi as automobile roads, and the scheme is not as fanciful as it may appear to some.

HIGHWAY COMMISSION MAKING PLANS TO WIDEN ROAD.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows and Meetings.

Nov. 9-16.....—Philadelphia, First Regt. Armory, Automobile Show, Philadelphia Automobile Trade Association.
Nov. 16-23.....—Baltimore, Third Annual Automobile Exhibition, Automobile Dealers' Association. B. R. Johnson, manager, Piper Building.
Nov. 30-Dec. 7..—Chicago, Coliseum and First Regt. Armory, Eighth Annual National Automobile Show, and First Annual Commercial Vehicle Show, National Association of Automobile Manufacturers.
Dec. 9-15.....—Detroit, Riverview Park Auditorium, Detroit Automobile Dealers' Association. LeRoy Pelletier, manager.
Dec. 14-21.....—St. Louis, Mo., New Coliseum, Second Annual Auto Show, St. Louis Automobile Manufacturers' and Dealers' Association.
Dec. 28-Jan. 4..—New York City, Madison Square Garden, Importers' Salon. C. R. Mabley, manager.
Feb. 10-15.....—Detroit, Light Guard Armory, Tri-State Automobile and Sporting Goods Association, Seventh Annual Show.
Mar. 7-14.....—Boston, Mechanics' Building and Horticultural Hall, Boston Automobile Dealers' Association. Chester I. Campbell, manager, 5 Park Square.
Mar. 9-14.....—Buffalo, Convention Hall, Sixth Annual Automobile Show, Automobile Club of Buffalo. Dai H. Lewis, manager.
Mar. 21-28.....—Toronto, Canada, St. Lawrence Arena, Automobile Show. R. M. Jaffray, manager.
Apr. 5-12.....—Montreal, Canada, Arena, Third Annual Automobile and Sportsman's Show. R. M. Jaffray, Mgr.

Motor Boat Shows.

Dec. 7-14.....—New York City, Grand Central Palace, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
Jan. 1-8.....—Chicago, Coliseum, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
Jan. 25-Feb. 1..—Boston, Mechanics' Building, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
Feb. 3-8, '08....—Buffalo, Convention Hall, First Annual Power Boat and Sportsman's Show, auspices of Buffalo Launch Club. Dai H. Lewis, manager.
Feb. 20-Mar. 7..—New York City, Madison Square Garden, Fourteenth Annual Motor Boat and Sportsman's Show.

Races, Hill-Climbs, Etc.

Nov. 15-16.....—Newark, N. J., 24-hour Endurance Run, Automobile Club of New Jersey.
Nov. 26-28.....—Chicago, Three-day 600-mile Reliability Race, Chicago Motor Club.

FOREIGN.

Shows.

Nov. 11-23.....—London, Olympia Motor Show.
Nov. 12-Dec. 1..—Paris, Exposition Decenniale de l'Automobile, Grand Palais, Esplanade des Invalides, Automobile Club of France.
Nov. 22-30.....—London, Agricultural Hall, Stanley Show.
Dec. 5-22.....—Berlin, Germany, Automobile Show.
Dec. 21-Jan. 2..—Brussels, Show, Palace of the Cinquantenaire.
Jan.18-Feb.2,'08—Turin, Italy, Fifth International Automobile Exhibition, Palace of Fine Arts, Valentino Park, Automobile Club of Turin.
Mar. 21-28.....—London, Agricultural Hall, Cordingley's Show.

Races, Hill-Climbs, Etc.

Dec. 8.....—Paris, Straightaway Aeroplane Speed Test, auspices of "L'Auto."
Dec. 13.....—Paris, Competition for Agricultural Automobiles, auspices of "L'Auto."
May 12, 1908....—Sicily, Targa Florio, Automobile Club of Italy.
June 20-July 5..—Grand Prix, Dieppe Circuit, Automobile Club of France. (Exact date to be announced.
August, 1908...—France, Coupe de la Presse, Automobile Club of France. (Exact date to be announced.)

ACETYLENE LIGHT FOR AUTOMOBILES

By EUGENE BOURNONVILLE.*

THE pure whiteness of the acetylene flame is closely akin to sunlight in the proportion of the various colored rays of the spectrum. It is evident from the table published by Munsterberg, that the light yielded by acetylene, not only more nearly approaches sunlight in the proportion of the rays of different wave length, but is even richer than sunlight in blue and violet rays, which are most essential to the chemical action of light. For this reason there is no other light which can compete advantageously with acetylene for the purpose of automobile lighting. It is evident that when a vehicle seldom travels at a speed less than ten miles per hour and most of the time much faster, no light is too good and the best light obtainable becomes a necessity to enable the driver of the traveling car to instantly distinguish all the obstacles which may be encountered. There are several different ways of producing acetylene light, which divide themselves into two principal classes: First, the making of gas by the use of a generator. Second, the use of gas under pressure, stored in properly constructed cylinders.

There are many ways of generating acetylene gas from calcium carbide, but the best method is that of dropping a small quantity of lump carbide at a time into a comparatively large volume of water. The carbide falls to the bottom where the gas is generated and travels upward to reach the surface of the water, cooling the gas and retaining most of its impurity by washing it. This system, however, cannot be used on automobiles, the apparatus required being too bulky. Accordingly it can be employed only for large installations, such as house lighting. Two water-feed types of acetylene gas generators are appropriate for auto use.

First: The one by which the water is above the carbide or is so arranged to have its level a few inches above it, permitting the water to fall on the carbide drop by drop, the flow of the water being regulated by a needle valve. This system has almost been abandoned for the reason that it is practicaly impossible to feed exactly the proper quantity of water to the carbide, so as to keep a constant and uniform flow of gas to the burner at the proper pressure. If the carbide is very rich or if the water drops too fast, gas will be generated in excess and will blow at the burner. If the water feeds too slowly or if the carbide is of poor quality from having been exposed to the action of the air, the gas will not generate fast enough and the result will be too little pressure for proper combustion, producing a dim yellow light which will smoke and very rapidly carbonize the burner.

The type of acetylene generator for automobile use and the one which is in almost universal use, is the one in which the water enters the carbide chamber at the bottom. The carbide chamber is an inner compartment located in a larger one which acts as a water reservoir and at the same time serves as a water jacket. The only connection between these two chambers is a small aperture in the bottom of the inner chamber. The moment that the valve leading to the chamber is opened, allowing the gas to pass out of the carbide chamber, the water takes its place and comes in contact with the carbide, thus generating more gas and by increasing the pressure in the carbide chamber forces the water out by the same aperture that it entered, but as the gas is gradually used, the water reenters the carbide chamber, thereby maintaining an even pressure. When the generator is not in use, the pressure keeps the water from contact with the carbide.

The only other method of using acetylene for automobile lighting is to have the gas compressed in special cylinders. Acetylene, or any other gas, in empty cylinders, can only be compressed about once the capacity of the cylinder for every atmosphere, say for every fifteen pounds of pressure. Accordingly, a cylinder of a capacity of one cubic foot at a pressure of 150 pounds, would only contain ten times its capacity, or ten cubic feet. This would not be practical, as a cylinder would be entirely too bulky, and furthermore, compressing the gas in a cylinder without any means of checking the propagation of the explosive wave to the whole volume and contents, would render the system very dangerous in case of fire, and also for many other reasons. Acetylene being a highly endothermic gas, it is always advisable to protect it when compressed from any excessive external heating. An acetylene cylinder should never be installed next to the muffler or alongside of the exhaust pipe, as is very often the case.

This brings us to the storage of acetylene compressed in porous substances and dissolved in acetone. It is marvelous, the large quantity of acetylene which can be stored in a comparatively small receptacle at a pressure of 150 pounds, when the cylinder is constructed in accordance with the patents and methods of the Commercial Acetylene Company, controlling all the U. S. patents.

The cylinder is filled completely with a substance of very fine porosity and which, if compressed to a solid, would only fill 20 per cent. of the total volume of the cylinder; accordingly having a porosity of 80 per cent. This porous substance, in case of internal ignition caused by external heat or otherwise, is a safeguard against explosion as it will prevent the explosive wave from passing through the whole volume of compressed gas, but will localize the explosion without raising the pressure in the cylinder more than about 5 per cent., and consequently is considered not explosive when all other details of manufacture are observed, such as the entire absence of copper or its alloys, etc.

This porous material is saturated with acetone in the proportion of about 40 per cent. of the cubic contents of the cylinder. Acetone, which is a liquid, is a great solvent of acetylene gas and absorbs twenty-five times its own volume when at 62 degrees Fahrenheit, for every fifteen pounds pressure to which it is subjected by forcing acetylene gas into the cylinder with the aid of a gas compressor. For example, one quart of acetone at fifteen pounds pressure will absorb fifty quarts, and at 150 pounds pressure, it will absorb 250 quarts. When the pressure is released, the gas leaves the acetone in the same state that it entered.

When acetone is charged with acetylene gas at 150 pounds pressure, the liquid is non-explosive as has been demonstrated several times, a spark plug having been inserted into one side of the cylinder and set off without any explosion taking place or injuring the cylinder in any way, provided that the cylinder is properly constructed in accordance with the above described methods. According to my own personal observation and opinion, there are very few cylinders on the market which are properly constructed.

This for the following reasons. First: Some manufacturers are trying to get around the patents. Second: Some are trying to manufacture cylinders as cheaply as possible so as to compete with others by cutting prices and not by making their own product worth the price. Third: Cylinders manufactured by those not familiar with the chemistry of compressed gas and who do not realize the danger of neglecting the slightest details.

As to the most suitable size burner to be used for automobile lighting, numerous tests have thoroughly demonstrated the fact that a burner consuming 3-8 cubic foot of gas per hour will project all the light that a six-inch mirror reflector is capable of handling. If a 3-4-foot burner is used, the acetylene flame being opaque will retain the rays that are reflected by the mirror within the area of the flame, so that the rays thus reflected are lost as far as the illumination of the road is concerned. Accordingly, the ideal light is a concentrated one in as small a flame as possible so as not to obstruct the rays projected by the reflector, and the use of anything larger than a 3-8-foot burner not only produces practically no more light, but is simply waste. A white flame can only be obtained with pure gas, the loss from impurities being 15 to 20 per ent. of the luminosity.

*Formerly chief engineer of the Commercial Acetylene Company.

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Again the Old Cars at the Old Stand in New York. For the eighth time in the course of its existence the doors of Madison Square Garden were thrown open on Saturday last, and the manner in which the public responded to the invitation to view the same makes of American cars that they have flocked to visit for several years past appears to be ample refutation of the idea entertained in some quarters that the day of the show is already on the wane. This is the third occasion on which the Garden has been filled with exhibits of the same makers of cars, and the first on which the foreign element will be entirely lacking. Nothing radically new was to be looked for, nothing out of the way to be expected, yet the keen anticipation of the many who arrived in New York a few days previous in order to be able to take in both shows, and the manner in which they filled the Garden on the opening and subsequent nights, spoke volumes for the hold the automobile show has on the public as an institution of widespread and absorbing interest.

Lined up in imposing array in the Garden are the products of those makers who were more than the backbone of the American industry but a few years ago—who were the very industry itself, and who, even now, are responsible for a very substantial portion of the American annual output, both in number as well as in the value of the cars turned out. Familiar names, familiar faces, and familiar cars greet the visitor at every turn about the attractively decorated arena or its annexes. It is safe to say that no one goes to a show nowadays expecting to find revolutionary designs, and confined as it is to the Selden interests, there cannot even be the expectation of seeing those new Western productions—that the independent show is responsible for—at the Garden, in view of which the attendance and the interest manifested on every hand tell a tale of their own, the moral of which would seem to be that the show is worth every dollar it costs in publicity gained. And there has seldom been as striking an illustration of this as the very successful show that is now filling every square foot of space in the Garden with American-made products.

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Does It Pay to "Knock" the Other Fellow's Car? Apart from those things that are absolutely reprehensible or downright dishonest, most of us are governed in our business relations and policies by a single guiding star. Does it pay? If it does not, we do not delay in following that sententious admonition of the vernacular to "forget it." If it does pay, we are apt to cling to a practice, the following of which has no other excuse for continued existence. The habit of what is known in the current slang of the day as "knocking" is something about which there is a difference of opinion when judged by the foregoing clear-cut standard. Some automobile dealers apparently regard the quickest and most effective way of selling their own cars is to belittle those of any the prospective customer may happen to mention. They combine not a desirable feature that the buyer is looking for, while his is an absolute paragon of all the virtues automobile.

The average man who buys an automobile gives the matter considerable thought before he invests. He is neither a child nor an idiot, nor, on the other hand, a technical expert. He does not implicitly believe every word the salesman tells him, as a boy might, nor does he permit himself to be gulled as if he were *non-compos*, nor can he give his informer the lie direct, because he is not familiar with automobile construction as a whole, or the good and bad points of the particular cars that the agent is at pains to condemn so roundly. No car is all good points, and few, indeed, are thoroughly bad, but even if they were, the agent is not a disinterested judge. Surely "knocking" forms no part of the art of salesmanship, for the man of common sense is far more apt to become disgusted with the prejudiced aspersions of the narrow-minded individual who is trying to sell him a car than to be decided in his choice of the latter by such petty and underhand means. The letter of a Western correspondent who appears to have suffered to the extent that he still has his money and none of them have sold him a car, shows that it does not pay, if evidence of that fact were needed.

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Has the "Horsepower Situation" Been Cleared? There has been more juggling with the term horsepower since the advent of the automobile than there had been prior to then from the time of Watts, and it does not seem as if the numerous attempts made to bring the matter of horsepower ratings down to the popular level were entirely successful. Abroad, the Royal Automobile Club, and here, the A. L. A. M., has tried its hand on the evolution of a standard. Theoretically, the latter is beautifully simple, but practically it hardly appears to work out in the manner in which even its formulators intended. Naturally it is intended for popular consumption, so to speak, and as such could not be expected to form more than an approximation, but it does not even do that. Loyalty to official standards is shown by the A. L. A. M. members and their salesmen in its adoption, but the rapidity with which the latter make haste to inform the inquirer that the real output of the motor is fully 50 to 60 per cent. greater reveals their belief in its accuracy. But apart from the fact that it tends to overrate small motors slightly, and underrate large ones grossly, the layman is as much confused by the fractional ratings as he was by the old-time hyphenated style.

TWO-WHEELERS GIVE EVIDENCE OF POPULARITY

By W. F. BRADLEY.

THOUGH in restricted quarters in the basement of the Garden, motorcycle enthusiasts display an enthusiasm which augurs well for the continuance of the two-wheeler, despite the growing encroachments of popular two-seated runabouts. Excepting that every maker has abandoned powerful heavyweight machines in favor of a type of medium power and as light weight as possible consistent with strength, there is a wide diversity among the exhibits.

In frame design there are representatives of every school, the complete frame—that is a frame from which the entire motor might be removed without destroying the unity of the frame; the broken frame—the crankcase uniting the two stays; and the class of which the Indian is one of the best-known examples, in which the motor is combined as a part of the frame of the machine. Each class has its own supporters, its own merits and demerits, and it would be impossible to single any machine as best merely because of these features.

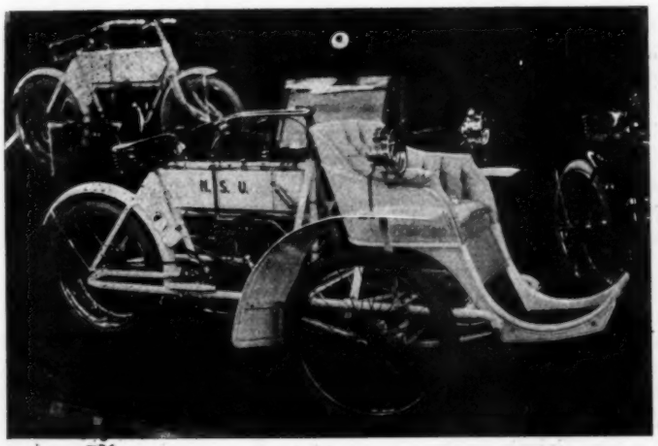
Some type of shock absorber or cushion head is recognized as a necessity for every motorcycle, it being impossible without a device of this nature to travel at even a moderate speed without suffering from excessive vibration. Not only is a good cushion necessary, but the mechanical construction of the device should be of the best and give every guarantee of security. An interesting arrangement is found in the spring fork of the Thor, consisting of a one-piece stem and lower connection with triple keyed top connection. Four levers connect the fork stem of the frame with the parallel extending fork sides, making eight connecting points of ample size and all equipped with ball bearings. To obtain still easier riding the cushion fork of the Indian has been doubled, the change having been effected without in any way destroying the line of the machine. A strengthening of the spring forks forms one of the features of the new models of the R-S, the reinforcement consisting of a small tube passing from the eye in the fork end to the fore part of the crown. On the Styria common European practice is followed by a double front fork, without the use of any spring device. The Curtis has a somewhat similar construction, though a spring fork can be added at a small extra cost. A new spring fork has been designed for the Marsh-Metz, consisting of a flat three-leaf spring held by three bolts under the fork crown; the springs act in either direction, doing away with any recoil arrangement.

Single-cylinder machines still comprise the majority of the exhibits; there are "twos"—a number of them—conspicuous being the Indian, the Marsh-Metz, and the Curtis; one "four" from the F. N. factory in Belgium, and an eight-cylinder racer, shown by the G. H. Curtis Company, conclude the departures from the small power classes. It is doubtful if all the single-cylinder machines can develop sufficient power to carry a rider over the more difficult parts of country roads, but the present tendency very wisely seems to be toward a medium power with lower weight and high efficiency.

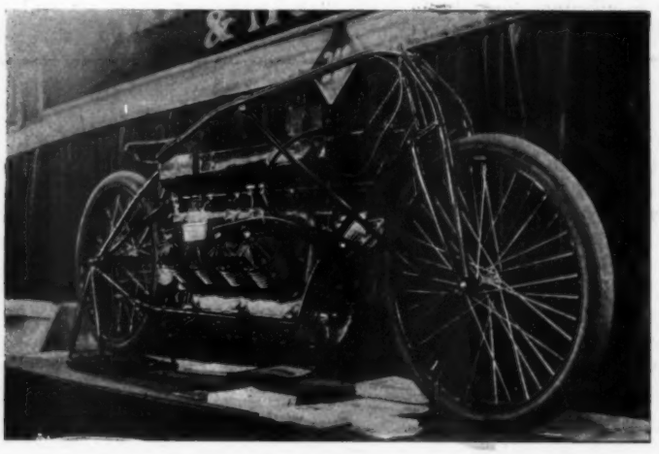
Automatic intake valves are still in a majority, but that majority is not so great as was the case even a couple of years ago. The new model of the Indian, for instance, is now made with either mechanical or automatic intake valves. The mechanical arrangement is a single cam, operating the exhaust valve direct and the intake valve by means of an operating arm fastened to the exhaust valve lift, the intake valve still being placed in the cylinder head. The mechanical intake is certainly an improvement, and owing to its simplicity and ease with which it can be fitted, doubtless numbers of Indian users will consider it advisable to have their models fitted in this way.

With magnetos at their present price it is hardly to be expected that every motorcycle will be equipped with this source of electric current. Yet there are an increasing number of medium-priced machines which now have this improvement. The F. N. of Belgium four-cylinder machine, with superimposed valves, the intake being automatic, follows the best European practice with a high-tension Bosch magneto, inverted and carried on an extension at the forward end of the crankcase. On all the Indian models for 1908 the option of a high-tension magneto is given at an extra cost. A similar offer is made by the makers of the R-S.

Between shaft and bevel gear, single chain, and various types of belts, there is sufficient variety of drives to satisfy almost everybody. In a few cases there is an option on one machine of both gear and chain drive. This is so in the Indian, where on all models but the 3 1-2-horsepower single-cylinder machine, either gear or chain drive may be obtained. All gears are fully protected by a gear case, easily removable at will. An interesting type of drive is employed on the F. N. four-cylinder motorcycle, consisting of bevel gears and shaft, all completely encased. A flexible connection is provided by four helical springs in the flywheel, to take up any shock between engine and transmission.



N. S. U. MOTOR BICYCLE WITH FORE CARRIAGE ATTACHED.



CURTIS SWIFT AND POWERFUL EIGHT-CYLINDER RACER.

PREPARING FOR FRANCE'S DECENNIAL SHOW

PARIS, Nov. 1.—In twelve days President Fallieres, surrounded by members of the Government, and escorted by Republican Guards, will pronounce the stereotyped discourse marking the invasion of the public through the front gates of the Grand Palais and the escape of an army of workmen from the rear of the building. It is one of the peculiarities of the Paris Salon that each year the big hall shall be in an impossible state of chaos two hours before the opening, and that everything shall appear in perfect shape when the Republican trumpet is blown. Having been so during the past nine years, there is every reason to believe that the tenth show, crude as it is to-day, will have every piece of brasswork polished and every lamp in position when Baron Zuylen and his helpmates stand with bared head awaiting the arrival of the President.

It has always been the design of the Automobile Club of France that their annual Salon should be in every sense a national affair. What little opposition has sprung up from time to time has been promptly suppressed and the one national show organized more on the lines of a world's fair than a trade exhibit. Although the Grand Palais in the Champs Elysées is retained, it has long been too small to contain all those clamoring for admittance. Thanks to a complaisant municipality, almost the entire Esplanade des Invalides, a huge plot of land separated from the Palais by the Alexandre III. bridge, has been placed at the disposition of the club at a rental which would appear reasonable for a Harlem flat. Three main roads had to be closed, but the diversion of vehicular traffic has never been a serious matter when the interests of the Salon were in question.

On the Esplanade des Invalides a metal and wood hall, with an area of about 36,000 square yards, equal to the total of the Grand Palais, has been erected for commercial vehicles, machinery and motor boats. Every provision is here made for exhibiting machinery in motion, all machine tool makers and constructors of stationary power plants having made arrangements for showing their products under working conditions. Judging from the shafting in position, some of the stands will contain a dozen heavy machine tools under power.

City Streets and Squares Comprised in Decorative Scheme.

Gustave Rives, the wizard of the show, has announced that the decorations for the decennial exhibition will be a big advance on those of previous years. It is difficult to understand where improvement will be made, for last year every electric power plant in the city was called upon to render aid. Yet Rives has taken charge of the two big halls, the Avenue Alexandre III., the Bridge, the Champs Elysées, and the Place de la Concorde, with the intention of clothing them in a luminous robe which will beggar even the gorgeous dress of the Russo-France fête days.

Certainly the Paris exhibition will hold its own as the largest and most gorgeous of the world's automobile shows, but it is certain to be affected somewhat by the London show opening one day earlier and closing at the end of seven days. London does not claim to have more than an excellent trade show, realizing that it is impossible to rival Paris in size, decorations, illuminations and national éclat. But the commercial side of the British exhibition has been carefully developed, and as all Continental firms must, in view of their foreign trade, exhibit in London, and British exhibits and visitors are few at Paris, John Bull believes that he has obtained commercial supremacy. The Paris show remaining open two weeks longer than the London one, there will be an opportunity for English visitors to attend both, but few will make the journey for business purposes only.

It has been customary during the holding of the Paris Salon to unite automobilists in conference on subjects of universal interest, large conference halls being set apart for this purpose within the Grand Palais. Although three subjects have been chosen this year, alcohol, touring, and motor boats, only the discussion on alcohol is likely to create international interest. Judging from the list of scientists, technicians and statesmen at the head of the different sections, the alcohol conference will be one of the most important ever held in connection with Paris Salons. Interest is more than local, among the many distinguished foreigners having intimated their intention of being present being Frank Rutter of the United States Department of Agriculture. The four technical groups will deal with the application of alcohol to the automobile, its application to other than the automobile industry, heating and lighting, and technical matters connected with the production, denaturation and carburetion of alcohol. The economic section, also divided into four classes, will discuss production, application, legislation and customs, and the use of alcohol for army transport service.

At the touring conference the conditions discussed will be those of France, foreign conditions only being involved in so far as custom and police regulations affect the home tourist. There is a desire to obtain uniform automobile laws and regulations for Europe, but it is certainly too early for any practical move to be made in this direction. During the show a meeting of club officials will be held, as in previous years, to draw up the base of an automobile calendar for the coming season. As some representative of almost every automobile club in Europe is present during the Salon, it is possible, by mutual agreement, to outline a program the events of which will not clash, and by means of which manufacturers are advised in ample time of coming events.

What New Features May Be Expected at the Salon.

Although French constructors are never anxious to give advance information of their models, and this year is no exception, mechanical features at the coming show will doubtless be more numerous than in 1906. The commercial automobile, from light delivery vehicles to Renard trains, will form a strong class. It is realized that the field for powerful high-priced touring cars has been overdone, the overproduction in this direction being almost entirely responsible for the evil reports which have gone into circulation during the past two months. Commercial vehicles will this year occupy a space almost as large as that devoted to powerful touring cars, the progress made in this section being enormous. A still newer development is the small two-seated runabout, with either a two-cylinder or a single-cylinder engine, selling for about $500. For the most part these small cars are built by firms formed by men who have broken away from the big factories; indeed, there are not more than two firms of international repute engaged in this line. Darracq, among the big makers, is now ready with a couple of cheap runabouts, one with a single cylinder and the other with a two-cylinder engine. A large number of big factories promise a complete touring car at prices ranging from $1,200 to $1,500.

Contrary to certain reports, the use of side chains will not be extended. Indeed, indications are that the contrary will be the case, every firm in France now adopting shaft drive for its smaller models. Panhard and Dietrich, both of whom have persistently stuck to the chain, announce shaft drive for their lighter cars. More town vehicles and more taximeter cabs than ever before will be a feature of the show. There is a strong tendency, especially in the smaller town vehicles, to cast all four cylinders in one block. Six cylinders will be in evidence, but will certainly not be one of the features of the show. Important speed tests this year, which have much less connection with fashion than automobile shows, have failed to develop any remarkable features in the "six" that is not already possessed by the "four." Leading French makers, important among them being Renault, will produce six-cylinder models generally as a concession to a popular fad, and not because of any firm belief in their superiority.

WHY THE SIX-CYLINDER MEETS ALL REQUIREMENTS

By ALEXANDER WINTON.

A MAKER of four-cylinder cars, who is also making a few sixes, has appeared in the daily and trade press with the declaration that sixes are inferior to fours, by which admission he confesses that he is now making inferior cars—in other words, that he is retrograding. However, he explains his fall from grace by stating that he was "forced into it," and since the force must have come from without, we can only conclude that it represented competition and public demand. He does not successfully show why the public should demand inferior cars and still be willing to pay more for them than it pays for fours.

He rightly states that one claim in favor of the six is that it runs smoother and easier than the four, adding that the torque is said to be "much more continuous." Continuous is not a comparative term. Either a thing is continuous or it is not continuous; there is no half-way continuity. "Continuous" describes that which is absolutely without pause or break. Torque means driving pressure exerted on crank shaft and driving shaft. The only element in an automobile that exerts driving pressure is the motor, and whether the driving pressure is continuous or not depends wholly upon the number of pistons.

Performs Same Operation.

Note the operation of a single-cylinder motor, because each individual cylinder of an automobile motor (four-cycle) performs the same operations, whether there be one, four or six cylinders in the motor unit.

In the single cylinder there are four piston strokes to each complete cycle, each cycle requiring two complete revolutions of the crankshaft, as follows:

1. First half revolution of crankshaft. Gas drawn into the cylinder. Termed the suction stroke.
2. Second half revolution of the crankshaft. Gas compressed in the cylinder. Termed the compression stroke.
3. Third half revolution of the crankshaft. Combustion and expansion of gas in the cylinder. Termed the power stroke.
4. Fourth half revolution of the crankshaft. Burned gas expelled from the cylinder. Termed the exhaust stroke.

Note also the demonstrated and accepted mechanical fact that the power of the power stroke does not continue throughout the entire stroke. Hence in a one-cylinder motor power is exerted less than one-fourth the time.

Always One Stroke Behind.

In the four-cylinder motor, the four pistons are so timed in relation to the crankshaft revolution that each piston is at all times one stroke behind its predecessor. So, while one cylinder is developing power, another is compressing, another drawing in a charge and another exhausting. Thus power strokes in the various cylinders follow one another. Power impulses, however, are not continuous. They are separated by intervals of no power at the end of each power stroke, for, as already stated, power is exerted during only part of the power stroke. On this point there is no difference of opinion among mechanical engineers.

Due to this condition, it follows that the power stream of the four is not continuous, but intermittent, and that the torque of the four is never continuous, but always intermittent, and this condition is not changed no matter how fast the four motor may turn over.

Notwithstanding this truth, the four-cylinder spokesman declares that:

"It is probably not out of place to state that we claim to obtain in our four-cylinder motor the gradual and even application of torque that is talked so much about in the six. This we accomplish by means of a superior carbureter, which we have developed after ten years of constant experimenting to get a perfect gas-making apparatus."

Any remarks relative to carbureters in relation to torque are as irrelevant as a claim of perpetual motion. The best carbureter in the world cannot cause a piston to be driven farther than the length of its stroke. "Argument" cannot disregard established mechanical laws.

Each Has Done Its Work.

In the six-cylinder, as in the four, two crankshaft revolutions complete the cycle, and during this period each of the six pistons has performed its four strokes. The pistons of the six are timed in relation to the crankshaft revolution so that each cylinder is not one complete stroke behind its predecessor, as in the four, but is only two-thirds of a stroke behind its predecessor. Thus in the six, the power of one power stroke is not spent before the succeeding power stroke takes hold. Consequently, the power stream of the six is never intermittent, but always continuous, and continuous means "absolutely without pause or break." Recall also that torque means driving pressure exerted on crankshaft and driving shaft. Torque cannot be continuous if power is not continuous. Continuous torque in the four is a physical impossibility. In the six torque is ever present and cannot be prevented, no matter how slowly the motor may turn over.

Smoother Running; Easier Riding.

And continuous torque means smoother running and easier riding than is possible with intermittent torque; also it means longer life to car and lower fuel consumption.

The four-cylinder spokesman says:

"The basic argument in favor of the six-cylinder is the continuous torque—but let us carefully dissect this argument for a moment. A six-cylinder motor geared, say, two to one, delivers twelve impulses to the rear axle for every revolution of the wheels. Acting on precisely the same principle, a single-cylinder motor geared twelve to one will also deliver twelve impulses to the axle for every revolution, and the forward movement of the car is just as smooth as though six cylinders were employed."

A six-cylinder motor geared 2 to 1 delivers six, not twelve, impulses in the period stated, and a single-cylinder geared twelve to one delivers six, not twelve impulses. This mistake on the spokesman's part is one of mathematics, an exact science. Does it increase his authority on points that may be somewhat more speculative?

The comparison of a single cylinder with a six can hardly be serious, however, for with both motors giving the same number of revolutions per minute the single would drag along one mile, while the six would cover six miles. And in doing that work the piston of the single cylinder would travel six times as far as any one piston of the six, hence being subjected to six times the wear and tear.

And beyond all that, the torque of the single cylinder can no more approach the continuity of six-cylinder torque than can two parallel lines meet. For continuous torque is obtained only from power strokes that overlap, as they do in the six.

"It has been claimed," declares the spokesman, "that six cylinders of given size will develop 50 per cent. more power than four cylinders of equal dimensions, all other things being equal. But is this really the case? I think not. Years of experimenting have shown us that with all other things equal the addition of two more cylinders does not produce 50 per cent. more power. In fact, a much smaller percentage than that was all that could be noticed after over a year of expert testing."

This is the prize avowal.

One horsepower is that volume of energy capable of raising 550 pounds through one foot of space in one second of time. If one cylinder of given size will develop 10 horsepower—that is, be able to raise 5,500 pounds through one foot of space in one second of time—no influence on earth can prevent two exactly similar cylinders from developing twice that power. And on the same reasoning, if four of these cylinders develop 40 horsepower, it would be a freak of mechanics if two additional

cylinders exactly similar (working under identical conditions) did not develop 50 per cent. more power. This is not a matter of individual opinion or of expert testing; it is the working out of mechanical laws.

A Pertinent Question.

Perhaps the four-cylinder spokesman contends that of four exactly similar cylinders, total rating 40 horsepower, one cylinder would develop 15 horsepower, another 13, another 7, and another 5. If so, which of the four is the 15-horsepower cylinder, and why? Again:

"The principal difficulties with the six-cylinder, which no one can deny, are that it requires 50 per cent. more mechanical parts, 50 per cent. more ignition apparatus, 50 per cent. more gas apparatus, has 50 per cent. more valves to grind, has 50 per cent. more weight, and requires 50 per cent. more radiating surface than a four-cylinder motor of equal power, and consequently requires 50 per cent. more care and 50 per cent. more repair bills."

This statement is loose. For instance, mechanics know that radiating surface increases as the square, whereas cylinder volume (horsepower) increases as the cube. The statement of radiating surface is therefore inaccurate and tends to discredit the other statements. "Fifty per cent. more ignition apparatus" might be taken to mean that if four cylinders require one magneto, six would require one and a half magnetos, and we assure an innocent and unsuspecting public that this fear has no foundation in fact. Read this:

"It is somewhat questionable whether the double complication resulting from the added two cylinders is warranted by the improvement in regularity of running and freedom from vibration secured."

This quotation is not from the four-cylinder spokesman's remarks. It is the serious talk of an American automobile authority, Albert L. Clough. One might think he were arguing against six cylinders, but he isn't. His talk was delivered two years ago, and he was arguing against the four and in favor of the two-cylinder, which to-day has as few friends to defend its cause as the four will have one year hence. The quotation is introduced merely to show that the old stock arguments, which no longer hold good against the four, are now being tried in vain against the six.

"Fifty per cent. more care and 50 per cent. more repair bills," says the spokesman.

Let us see. Does the four require 100 per cent. more care than the two? Are its repair expenses 100 per cent. greater? If not, then the relative argument against the six also fails.

Laments the Length.

The four-cylinder spokesman laments the length of the six-bonnet and wheelbase. On the Winton Six-Teen-Six the bonnet is seven inches longer and the wheelbase is but eight inches longer than on the four-cylinder Model M.

"The carburetion difficulties increase because there are two cylinders taking in gas at the same time, and great care must be used to distribute this evenly to all cylinders."

The answer is in the carbureter manifold; this can be properly made so that the difficulty is overcome. Ought to be an easy task for the maker who can produce torque by means of a carbureter.

On the Winton Six-Teen-Six the carbureter manifold is unique and efficient, so efficient in fact that no carburetion difficulty has been encountered. And in six-cylinder construction generally, since suction through the carbureter is continuous, carburetion reaches a perfection unknown where suction is intermittent, as in four-cylinder motors.

"Think," says the four-cylinder spokesman, "of an ordinary chauffeur attempting to grind in twelve valves and to time a double system of ignition, or to adjust the valve timing!"

Mercy! The man who can grind in one valve can grind in a thousand with no greater mental exertion per valve. The man who can time one system of ignition can time a dozen. And the man who can time one valve can time a limitless number of them, because an increased number of cylinders and valves does not change the relation of a single valve to its particular piston.

"Throughout the world," he declares, "it is almost invariably the case that racing machines are four-cylinders."

The most wonderful racing performance the world has ever seen—1,581 miles in twenty-four hours—was done by a six-cylinder car. And that performance hardly bespeaks carburetion or ignition difficulties either.

"We ourselves build six-cylinder cars," he adds, "to give the speed and power that a few drivers demand."

Excessive speed and power are the least important advantage of the six. The more important, due to overlapped power strokes and continuous torque, is that the six requires actually less developed power to do driving work. Take two cars of equal rated total horsepower, and the six-motor will drive its car at a slower motor speed than the four. And, accordingly, the six always has in reserve over normal work a supply of power not possible in the four. The six has a wider range of speed on high gear than has the four, requires less gear changing, is sweeter running, has less wear and tear, gets the more power out of gasoline and is more silent than the four. These, not excessive speed and power, are six strong points.

"Why, then," concludes the four-cylinder spokesman, "is it necessary to use six cylinders if the torque of the four is practically constant, the supply of gas being even and steady at all speeds?"

It wouldn't be. The fact is that these are the identical points on which all fours, irrespective of make, fall down, due not to individual shortcomings of the four-cycle principle. And these faults are overcome in the six.

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6 MOTOR TRUCKS CAN DO WORK OF 15 HORSE-DRAWN VEHICLES

INDIANAPOLIS, IND., Nov. 6.—Probably the most interesting change from horse-drawn vehicles to motor trucks that has ever been made in Indianapolis has just been effected by the City Express Parcel Delivery Company. This company has just installed six gasoline 1 1-2-ton trucks to take the place of fifteen delivery wagons and twenty-two horses.

The company operates a parcel delivery service almost exclusively, although some general transfer work is done. Such service, of course, requires that a large number of small packages be delivered as quickly as possible, the tariff on each package being small. Thoroughly satisfactory service has not been obtained with horses because it required too much time to deliver a few packages. Tests have shown that six motor trucks can do the work of fifteen horse-drawn wagons without much difficulty.

Instead of training its old drivers for truck service, the company has found it more practical to employ experienced chauffeurs at $15 a week and place a second man on each truck for deliveries. The trucks are kept in a public garage at $20 each per month, under a maintenance contract. This guarantees that should a truck break down en route another will be sent at once to take its place. The saving over horse-drawn wagons is estimated at $300 per month.

DIAMOND RE-ELECTS OLD OFFICERS.

AKRON, O., Nov. 4.—The annual meeting of the Diamond Rubber Company resulted in the re-election of the old board of directors and officers. The directors are: F. A. Hardy, A. H. Marks, W. B. Miller, A. H. Noah, O. C. Barber and E. K. Hardy, Akron; R. G. Lake, Chicago. The officers elected are: President, F. A. Hardy; vice-president and superintendent, A. H. Marks; secretary, W. B. Miller; treasurer, A. H. Noah.

NO RADICAL CHANGE IS TO BE EXPECTED IN THE FUTURE

By HAYDEN EAMES, M.E.

FROM the viewpoint of the engineer the gasoline automobile of the present day does not differ radically from a type that was accepted as standard about three years ago. In the electric field, both for pleasure and commercial vehicles, the problems as far as engineers were concerned were settled about three years ago. The problems that confront manufacturers to-day are those of an educational nature, to teach the users, particularly in the commercial field, to operate their cars economically. During the past few years the automobile has passed through a crisis. Some few have failed, but the majority of the manufacturers of high-class cars have accepted a type which I do not believe will differ materially in ten years from that of the present time.

The day of "exclusive features," commonly referred to as talking points, has passed, and this is entirely logical. The automobile of to-day does not depend on sensationalism to sell, either in freak construction or price. The industry has passed through the experimental stage years ago. The typical design which has proved itself by time, and as only time can prove it, has been adopted. The evolution has been slow, but each year's experience has added valuable lessons.

Gottlieb Daimler, a name known everywhere in technical circles, gave the initial impulse to a now great industry by developing the modern four-cycle internal combustion motor from a purely experimental to an entirely practical basis. This, then, was the starting point, and it will surprise many people to learn that this was as far back as 1835. The laws that went into effect at the time that automobiles first made their appearance were so stringent and absurd that they, perhaps more than any other thing, arrested the development of the automobile. Even in 1900, the few leading manufacturers had little in common, and the cars differed radically both in design and in engineering principles. There were all types and kinds of engines, transmissions and drives, but in 1903 and 1904 engineers began to learn from experience and to apply these principles.

The four-cycle, four-cylinder motor, sliding-gear transmission, and, in fact, some of the foreign cars at that time were built on sound engineering principles and from which the car of 1908 has deviated but little. One point that has taken a long time to determine is the question of shaft or chain drive. The best engineers at one time unanimously agreed on the chain drive. The question was not a question of material, as sometimes stated, nor was it a question of weight, but everyone realized that until the floating type of axle was invented the shaft drive was far from right. It might stand up a year, perhaps more, perhaps less, but ultimately it was sure to go.

For this reason the best engineers clung to the chain drive, not because it was mechanically right, but because it was better and more reliable than anything yet introduced. With the advent of the floating type of axle, the weight taken off the shafts, the question of alternate stresses was eliminated and the problem to be solved was simplified to producing a shaft strong enough for the twisting or tortion of driving. This floating type of axle solved the problems of drives and the best cars are using it exclusively. The chain drive was adopted principally because it worked. On some of the earlier models anything was adopted that worked. The fundamental principle of constructions had not been decided upon, and refinements were given little attention.

The automobile shows of this year do not show anything radically different from the shows of 1905. A few of the manufacturers have apparently thrown aside the hard lessons learned through years of experimenting and branched off on entirely new tracks which are not based either on sound engineering or good business judgment, but in this respect the automobile business differs little from the manufacture of any standard article.

FROM THE STANDPOINT OF THE IMPORTER OF FOREIGN CARS

By CLINTON R. MABLEY, Importers' Automobile Salon.

AN industry is built up by the demands of human beings, no two of which are apt to agree on exactly the best method of accomplishing a result or the best result when accomplished. The consequence is that progress is demanding more strongly every day the recognition of a compromise brought about in one of two ways: either by allowing one branch to supply the needs of a people who prefer the products of that branch, and the other to supply the demand which favors its product; or, by assimilation, in which the best of each branch is eventually combined for the superior product at the highest price, and the remainder resolved into a combined product of a lower grade, which also fills an ever-increasing demand. Undoubtedly either one of those two processes will eventually apply in the solution of the American-*vs.*-foreign-automobile question, as they are fundamental principles applicable to any industry.

I might mention as an indication in favor of the former the increasing confidence in the American mechanical world, in foreign engineers and producers. Hitherto, Americans were loath to admit that there were any engineers or mechanical brains anywhere in the world worthy to compete with them. We may thank the imported automobile as an enlightener and educator in this respect. In addition to the great body of American automobile buyers, we have a very enlightened class of purchasers to-day who realize the value of the workmanship and selected materials of the foreign car and prefer it.

So we have continual converts to the foreign car in principle and practice, and we also have an increasing number of converts to the lower price, and all that it represents of American manufacture. The advantage in the proportion of the business is undoubtedly with the merchant who sells at the lower prices always, on account of the original lower investment, and on account of the more numerous replacements. This condition calls for the purchase by one individual of a greater number of units in a given number of years than in the case of the foreign car, where the purchaser looks more to the permanency of his greater first investment, and naturally expects to handle fewer units in the same length of time. As an argument for assimilation, we have the daily increasing number of foreign car makers selecting and using good points of American design, and some particular desirable material pertinent to America, and the recognition of the necessity and desirability of meeting American conditions generally.

So we have the peculiar spectacle of foreign cars with American road clearance, tread, wheelbase, and American bodies, and American cars with a foreign design of chassis, German design of transmission, French and German-made coils, magnetos, springs, axles, frames, and even whole motors, castings, and a widespread recognition of foreign workmanship in many of the most important parts of the automobile.

Negotiations have been opened recently by the German military authorities and the Wright Brothers, of Dayton, O., for the sale of their flying machine. Hart O. Berg, of Philadelphia, the financial backer of the Wrights, has been favorably received by the military authorities and negotiations have been entered into which are not likely to terminate soon on account of the numerous technical difficulties. The Wrights withdrew their proposition to the French Government before visiting Berlin.

AUTOMOBILE NOTES FROM EUROPEAN CENTERS

THE international motor show at Copenhagen closed on October 8, after having been visited by about 50,000 persons, a very good percentage for the capital. Among these were the King, who, although one of the few monarchs not enthusiastic on the sport, could not but countenance an exhibition of such industrial importance. He was accompanied by his brother, the King of Greece, and as they both examined all of the exhibits most carefully, paying quite a lengthy visit to the Ford stand, it is to be hoped that motoring in Denmark, until now a sadly-treated stepchild of legislation, will take a more upward curve. Business was satisfactory on the whole.

A London news agency has excited German circles by stating that the Emperor intends visiting Brooklands during his stay in England and that Mr. Edge will hold a race on the track at the time of the Imperial inspection. The Emperor has received a well-known South German king of commerce in private audience, who laid the project of a motor road from Frankfort to Berlin before the monarch. No further details of the interview have been made public as yet.

Switzerland, long notorious for its anti-motoring tendency, is weighing a proposal to prohibit motor traffic of any kind over Swiss roads on Sunday, in order to let the population use roads, lanes and by-ways freely and to its heart's content without being disturbed by the national bugbear. And this in a country which has to count on its influx of visitors for a large share of its existence.

The money-bearing propensity of motor-car taxation is once again most clearly testified to by the income derived by the Flemish province of Brabout from this source. Each horsepower here is charged at 10 francs, that is to say, if there are five cars with 25-horsepower each, that means that 125 horsepower are taxable. All in all, Brabout possesses 1,021 cars, with a total horsepower of 14,694, which, multiplied by ten, throws an annual sum of 146,940 francs into the coffers of the province.

The chauffeur of the Queen-Dowager of Italy, Cavaliere Utore Carolate, is at the same time a very clever doctor and combines both these qualities in the royal trips, which are the most frequent of any royalties. Her Majesty was in Germany in October and drove back to Italy in her car as well, her favorite and almost only mode of locomotion now.

Intending tourists through Austria will hear with satisfaction that the Austrian A. C. proposes to erect signboards bearing the different international signs throughout the Empire next year. Sub-committees have been formed, who report to a head committee in Vienna.

King Edward VII. and the Prince of Wales have accepted invitations to be official patrons of the Olympia Show, London, which opens November 11 and continues until the 23d.

A motor fire brigade train will make its appearance in Nuremberg early next year, where the city fathers have set aside 25,000 marks for the preliminary outlay.

FOR AMERICAN AUTOISTS LANDING IN ITALY

IN view of the fact that large numbers of autos are now being shipped from New York to Naples for touring purposes, Vice-Consul H. M. Byington submits the following information regarding the Italian customs regulations at Naples:

The entire charge of the custom-house agents and expenses on week days is 80 to 150 lire ($15.44 to $28.95) and on Sundays and Government holidays from 150 to 300 lire ($28.95 to $57.90). In order to clear a motor on Sundays or holidays, it is necessary to arrange on the preceding day, so as to insure the presence of the special officials. The duties payable are as follows: On cars weighing up to 500 kilos (1,125 pounds), 200 lire ($38.60); from 500 to 1,000 kilos (1,125 to 2,250 pounds), 400 lire ($77.20); over 1,000 kilos (2,250 pounds), 600 lire ($115.80). These duties cover the accessories of the motor.

Owners of motor cars on a visit to Italy can deposit the amount of the duty on entering the country, to be reimbursed to them on leaving, either by sea or by land. The reimbursement of the deposit cannot be effected after six months have elapsed, and to meet such a case application must be made to the Treasury Department of the Government for the necessary extension.

The Touring Club of Italy has a special arrangement with the Treasury Department which will save owners of motor cars much trouble and inconvenience. On demand of a member of a foreign touring club and on the deposit of the maximum sum of 600 lire the Italian Touring Club will issue a special certificate to be presented to the customs authorities on entering the country. On leaving the country the certificate must be duly indorsed to that effect, and the Italian Touring Club will at once refund the amount deposited on delivery of their certificate with indorsements.

For every motor car entering Italy the following documents must be exhibited to the customs: (*a*) Papers giving the name and address of the owner. (*b*) Certificate of the chauffeur showing that he is entitled to drive a car and the number and make of the car. The charge for landing a motor car is 25 lire ($4.83), irrespective of its size. Accessories cannot be admitted without payment of duty in cases where the car enters the country on deposit for temporary importation. Motor cars which have been introduced into the country on the deposit arrangement are free from Italian taxes until expiration of the six months or such time as extended by the Government.

WHAT THE AUTOMOBILE IS DOING FOR CENTRAL ASIA

CONSUL-GENERAL G. B. Ravndal, of Beirut, referring to Prince Borghese's feat as leading contestant in the Peking-Paris automobile race, which was started from the Chinese capital June 10, and concluded some fifty-eight days later on the arrival of Prince Scipione Borghese in Paris, quotes the following from the *Times* of India:

The car's achievement will give enormous impetus to emigration and colonization of the Asiatic wastes. The automobile is destined to be the pioneer of unknown lands, and when, through its agency, development of the country has reached a certain point, the railway will follow, binding new districts to the rest of the world.

Mr. Ravndal adds: In this connection, I call attention to my previous report on "Reclamation of Mesopotamia," of which the following is an extract:

The question of carrying tourists to Palmyra in automobiles, starting at Homs, has been seriously discussed in Beirut and Damascus, and one is led to believe in the possibility of a regular freight service between Damascus or Aleppo and Bagdad by automobile transport wagons. Experiments in the Sudan and Kongo Free State have proved their feasibility. In the plains of Syria, Mesopotamia, and Arabia, oil-motor freight cars would seem to have a future. Petroleum is comparatively cheap, owing to the proximity of the Caucasian oil fields.

AN AUTO'S CLIMB OF A ROADLESS CALIFORNIA MOUNTAIN

SAN FRANCISCO, Nov. 1.—On a recent October morning the squirrels and lizards on the summit of Mt. Diablo were startled to hear the rumble of wheels and the hiss of escaping steam. Up the hillside, slowly but surely, came a great mechanical monster, until, with one last whistling tug, the White steamer was on top! Mt. Diablo, situated in Contra Costa county, is the gauging point from which all surveys are taken, having an elevation of 3,810 feet.

The difficult ascent was accomplished by William M. Gardiner, Pacific Coast agent of the White Company, and William L. Slimmon, Claude A. McGee, Ross B. Main, and Alexander Beyfuss. Mr. Gardiner was at the wheel and the story is most interestingly told in his own words:

"We left San Francisco Saturday afternoon, spending the night at Danville, a little town about three miles from the foot of the mountain. At five minutes past 7 o'clock Sunday morning we left the hotel, and, stopping at the Boyd ranch, asked for permission from the manager of the Oakwood stock farm to use their road. He willingly granted our request, laughing in his sleeve at

WHITE STEAM CAR ON THE SUMMIT OF MT. DIABLO.

us, for he had no idea that we could make use of the permission and get to the top of the big hill.

"There are seven miles of unbroken grade from Oakwood farm to the summit, absolutely without a level spot. With regard to the road, it may safely be said that there was very little to be found. Overgrown in some places by dense underbrush, washed away in other places by the heavy rains of the winter, after which it had been baked by the scorching sun of summer, and everywhere covered with dust and loose stones, some parts were so washed away as to leave but two feet of road, the other side having been dug out by the winter torrents. Three years ago, the Sierra Club, on one of their long tramps, climbed this hill, and it is said that their provision wagons are the last to have used this road.

"We used the Diamond flat tread tires in order to get the greatest amount of traction possible, but even then the wheels skidded, and we were, in many places, compelled to jump along, or rush over the space, so that the momentum would keep the car from overturning or dashing down the cliff. Several times we were compelled to abandon what had been the road and strike off to one side, into the underbrush, which was so dense as to make it necessary for us to cut it away. Even then, we were compelled to remove our side lamps, and our car was pretty badly scratched up. One bridge we crossed looked so very weak that even after a close investigation of the under-pinning timbers we did not linger any in getting over it.

"We arrived at the summit of Mt. Diablo at 9:25, making the record time of 2 hours 20 minutes. Of course some of this time was spent in opening gates, investigation of roads and bridges, planning detours over cattle trails, and taking photographs. We did not try to make time up the mountain, merely wishing to attain our object, that of reaching the top; but I am convinced that we could again negotiate it in one hour.

"Descending the hill was an excitingly dangerous proposition. We were obliged to hold tight and be hurled helter-skelter down the rough road, hearing the reverberations of the stones, dislodged by our wheels, as they struck the bed of the canyon, several hundred feet below. We just had to keep going, it being impossible to slow up enough to snatch a photograph. I think we were all relieved when we reached the foot of the hill without having been precipitated into some canyon. None of us are particularly anxious to again make the trip. It is enough that we have chiseled on the State monument, way up among the clouds, the words: 'White Steamer, the First Car to Reach this Eminence.'"

SOCIAL FUNCTIONS OF THE SHOWS.

"It's always fair weather when good fellows flock together," is the motto of the Fairweather Club, which, on the evening of October 30, held its first monthly dinner at Reisenweber's, with General John Tyler Cutting the guest of honor, and L. C. Humphreys as the toastmaster of the occasion. Over a hundred participated, including many out-of-town tradesmen visiting the show. General Cutting heard many things said in his favor and few to his detriment. Creswell MacLaughlin, editor of *The Schoolmaster;* Henry Duncan, William Perrett, and John C. Wetmore were the star performers in the oratorical line.

A Rehearsal of the Telharmonic Idea.

At Telharmonic Hall, Thirty-ninth street and Broadway, Friday noon, Madison Square Garden show officials and press men were given a partial rehearsal of the Garden musical program, to be supplied by the wonderful instrument which transmits music to all parts of the city. The principles of telharmony were explained and an inspection made of the entire plant, which contains 145 dynamos, generating as many kinds of electrical currents, these currents when in predetermined combination making the tone the musicians release to the absent audiences. A buffet luncheon was a part of the function, of which A. H. Chadbourne, well known in automobiling, was the energetic factor.

Flat Tires Entertain Press Visitors.

The Flat Tire Club gave its banquet to the out-of-town newspaper men at the Hotel Cadillac, Friday evening, November 1, prominent tradesmen from various parts of the country being included among those invited to buy their own tickets. The affair was capably conducted by an executive committee consisting of E. E. Schwarzkopf, Henry Caldwell, Duncan Curry, Fred J. Wagner and H. T. Clinton. In the dressing of the banquet hall much originality was shown. Flat tires formed a part of the decorations, lamps helped to illuminate, and Toastmaster Caldwell utilized a horn in his characteristic filling of the rôle of chief fun-maker. There was all sorts of speechmaking and the occasion served to bring together many leaders, both automobile trade and press.

The press agents of automobiling have a dinner scheduled for to-night, and 'tis said that no undertakers will be tolerated in the heart-to-heart spread.

INDIANA'S PROPOSED AUTOWAY.

INDIANAPOLIS, IND., Nov. 4.—It is the cherished plan of Indiana automobile owners, and also of a number of county commissioners, that within a few months there will be a speedway stretching from Indianapolis to Chicago, for the exclusive use of automobiles. Such, at least, is the hope of Indianapolis car owners, which has been given much encouragement by John McGregor, a commissioner of Marion county, who now has the plan in charge. Because of his influence throughout the State, it is believed that he will meet with much success in broaching the plan to commissioners in counties north of Marion.

It develops that at a recent State convention of county commissioners, held in this city several weeks ago, that the matter was suggested by Mr. McGregor to a number of commissioners and that he met with much encouragement. It was pointed out that a roadway set aside by law for automobiles exclusively would lend safety to travel and permit slightly greater speed, if desired.

Mr. McGregor proposes a road from Indianapolis northward to South Bend and then to Chicago by way of Laporte. This would take in Noblesville, Tipton, Kokomo, Logansport, or Peru, Rochester, and Plymouth, as might be decided on later.

There has been much opposition to automobiles by farmers in northern Indiana, who have objected to automobiles using the same highways used by horse-drawn vehicles. It is believed that these same farmers would welcome a plan to take automobiles off of the leading north and south roads between Indianapolis and Chicago. In speaking of the proposed highway, Commissioner McGregor said:

"The building of a road for exclusive use of automobiles would not entail heavy expense to any county through which it would pass. In a few years it would almost pay for itself in damage suits saved, which now result from automobiles, buggies and heavy wagons using the same roads. It would also be a great accommodation to automobile owners and would do much to lessen the hatred of unfriendly farmers for automobiles."

It is probable that Marion county will take the first step toward such a highway in the spring.

SHOULD HELP INDIANA ROAD BUILDING.

INDIANAPOLIS, IND., Nov. 6.—The Indiana Railroad Commission last week made a ruling that will be of great benefit to road building when it fixed a maximum rate for hauling road building materials. The rates become effective within thirty days and highway improvements that have been held up because of the almost prohibitive rates for hauling materials will be taken up and pushed to completion.

Although Indiana has exceeded all previous records for road building this year in counties where material is scarce, it has been almost impossible to carry on improvements because of high railroad rates.

Last June the commission directed inquiries to each board of county commissioners in the State and replies were received from fifty-three out of ninety-one counties. It appeared from these responses that at that time no less than 898 miles of new roads were under way and that in fourteen counties road materials had been exhausted. It was found also that in twenty-four counties high rates had retarded work and that about 700,000 tons of materials are needed in the State for improvements and repairs each year.

The rates as arranged by the commission are based on mileage in cents per net ton, fixes a minimum car load at 40,000 pounds and provides for both a local and joint rate. The rates range from 24 cents per ton, local rate, and 28 1-2 cents per ton, joint rate, for a ten-mile haul or under, to 81 cents local and joint per ton for a haul of 225 to 250 miles.

About thirty-five railroads doing business in Indiana are affected by the decision.

P. S. C. BLOCKS ROAD IMPROVEMENT.

NEWARK, N. J., Nov. 4.—Improvement of the plank road, which forms the chief travel route between New York and Newark, and as such the autoist's gateway to Philadelphia, Atlantic City, and other cities lying in that direction, has long formed a project close to the hearts of Jersey automobilists, as well as of vast importance to the commercial interests of this part of the State. As a matter of fact, it is one of the most traveled highways in the East where autoists are concerned, and, by the same token, is in the worst state of disrepair, being absolutely dangerous for night travel.

Many attempts have been made to have the old plank construction over the meadows replaced by modern highway construction, but all to no purpose, and it is the opinion of Joseph H. Wood, formerly president of the New Jersey Automobile and Motor Club, publicly expressed in a letter, that the Public Service Corporation is responsible for blocking the improvement. This corporation controls most of the street railways in the State, and its lines monopolize one-fifth of the plank road, but according to the Hudson County supervisor of roads the concern is unwilling to bear its portion of the expense of repair or maintenance. In the meantime the appropriation made by the Legislature several years ago for this purpose cannot be utilized owing to the attitude of this corporation.

The New Jersey Automobile and Motor Club has taken the matter up, but thus far the committee appointed for the purpose has had to rely upon its own efforts, coupled with those of local commercial interests, as no information could be obtained from the boards of freeholders in either Essex or Hudson counties regarding the reason for not utilizing the above-mentioned appropriation. The club has taken up the matter in earnest and will exert every effort to call public attention to the matter and in other ways compel the proper authorities to take action.

EN ROUTE TO LAKE MAHOPAC, WATCH OUT.

Editor THE AUTOMOBILE:

It may interest some of your readers to know that the trap at Merritt's Corners, on the road to Lake Mahopac, N. Y., is now in operation on the double curve at Echo Lake. I was arrested Saturday, and charged with covering the distance laid off at the rate of ten miles per hour, the rate allowed being four miles, although only about half the distance is on a curve, the rest being on a straight road, which should increase the average speed allowed. The judge, Ogden S. Bradley, of Ossining, would not accept jewelry as bail, so I had to pay the fine. He denied that any case had been tried as stated in "The Automobile" of October 17, so I have sent him a copy of the article, though it will probably only tickle the "judge" to see his picture in print. ROBERT N. BAVIER.

New Rochelle, N. Y.

WILLIAM JENNINGS BRYAN UTILIZES A "45" PREMIER.

Having several appointments recently to lecture in various sections of Greater New York and vicinity, and these having been scheduled at close intervals, it was determined by William Jennings Bryan that the automobile would be the most desirable mode of conveyance. The committee selected the new 6-cylinder "45" Premier to enable the distinguished statesman to meet his appointments.

FRANKLIN CAR MAKING ITS RECORD OF 49 SECONDS IN THE CLIMB OF DUGWAY HILL, NEAR ROCHESTER, N. Y., ON OCTOBER 19.

WHAT THE A. A. A. LEGISLATIVE BOARD IS DOING

A CONVENTION of members of the American Automobile Association interested in legislation was held during the Grand Central Palace show. The meeting was called to order by President W. H. Hotchkiss, and discussions and deliberations turned over to Charles Thaddeus Terry, chairman of the Legislative Board. In his address on the subject, Mr. Terry, among other things, spoke as follows:

The Legislative Board of the American Automobile Association has kept in touch with the legislative situations in the various States to whose legislatures statutes relating to automobiles or the use of the highways were presented at their last session. While the general trend of legislation, as gathered from the data collected by the chairman of the committee, seems to be in the direction of reasonableness and a somewhat larger degree of fairness than heretofore and to show somewhat of abatement of the unreasoning hostility to the automobile and its use, because of their novelty, it is to be regretted that automobile legislation is even yet of so diverse and divergent a nature throughout the several States as to indicate an imperative demand for one of two things, to wit., either the speedy enactment of a Federal law covering the field as far as may be, or the enactment throughout the States of a uniform automobile State law framed upon the model of the best of the present State laws, with improvements thereon if possible.

The best of the energies of the Legislative Board, while sometimes diverted by other work which properly comes within the scope of its duties, has been directed to the preparation of the best bills possible within its capacity and the efforts to secure their passage.

From the outset, the plan to secure a Federal enactment of the kind described has met with universal favor, and the bill prepared and introduced in Congress at its last session has met with practically no adverse criticism, although copies of the proposed bill were widely distributed before it was introduced in Congress and suggestions and criticisms invited.

With regard to the proposed uniform State motor vehicle act, the task was as heavy as in the case of the Federal bill, if not more so, because the Board has met with the problem of attempting to harmonize in the proposed bill the various sentiments of various States with reference to legislative provisions in this regard, and to reach for the various States a common ground which might be defended on common sense principles as adequate for the protection of the public and the preservation of the rights of automobilists alike.

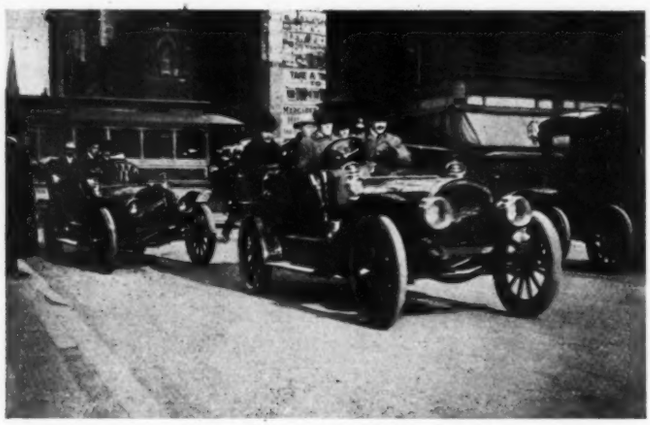
The energies of the Legislative Board will be directed toward the enactment of these two bills during the coming winter. In preparation for the campaign in behalf of the Federal bill, literature in the form of letters, of which there will always be a large supply on hand at the offices of the association, has been prepared, to be distributed by the automobile clubs and their members throughout the country and by individual automobilists not connected with any club, not only among other automobilists but among all classes of citizens, using them to communicate directly with their congressmen in support of the bill and to secure the favorable action of the committee and of Congress upon the measure. These letters have been prepared and await only the signature of any one who is sufficiently interested in the subject to use whatever influence may be at his command to secure the passage of this bill without the necessity of his expending any more time or effort than may be involved in the signing and mailing of such letters, unless he be willing to render the still more effective service of writing his own personal letters and sending them to members of Congress, particularly in his own district, and inducing his friends to do the same.

NEW YORK'S $10 FINE RULING REVERSED.

Instead of being able to escape with a fine of $10, regardless of the enormity of the offense or the status of the driver as a persistent violator of the law, under Justice Truax's decision handed down last August, which held that the ordinance of the Board of Aldermen had superseded the State law, offenders in the metropolitan district are now liable to spend a term in jail instead, as the decision in question has just been reversed by the Appellate Division of the Supreme Court. Justice Truax's ruling was rendered in the case of William Hainer, who was arrested and held for trial in Special Sessions, but who was released on a writ of habeas corpus. The case was appealed by the District Attorney, who is now sustained, so that the State law will again take effect as formerly. The latter imposes a fine not exceeding $100 for the first offense, and of not less than $50 nor more than $100, or imprisonment not exceeding thirty days, or both, for the second offense. This law was drawn up by President William H. Hotchkiss and Charles T. Terry, chairman of the Legislative Board of the American Automobile Association, and the ruling of the Appellate Division meets with their approval, as well as of other prominent autoists.

THAT FAULTY PENNSYLVANIA LAW.

PHILADELPHIA, Nov. 4.—After to-morrow any chauffeur who cannot produce a municipal license when called upon will feel the heavy hand of the law. A recent regulation of City Councils—which, by the way, has nothing to do with the State license—requires motor vehicle operators here to secure a license from the city's Bureau of Steam Boiler Inspection. Already upwards of a thousand permits have been issued.



HOW LICENSED MAGNATES UTILIZED THE UNLICENSED CARS.

UNLICENSED RIDE OF THE LICENSED.

In order, on Friday last, to reach the private rehearsal of telharmonic music, one of the features of the Madison Square Garden show, the members of the show committee, through a mix-up in arrangements, found it convenient to utilize Rambler cars to ride from the A. L. A. M. offices, in East Forty-second street, to Telharmonic Hall, on Broadway, near Thirty-ninth street. It so happened that Rambler cars were available in the emergency, and E. H. Cutler, George H. Day, S. T. Davis, F. L. Smith, W. E. Metzger, and Marcus I. Brock appeared on Broadway in the product of the Thomas B. Jeffery Company, which not only declines to become a part of the licensed body, but also keeps aloof from the independent association. Apparently there must have been some kind of a conspiracy in the proceedings, for a photographer was on the job, as is made apparent by the accompanying picture.

A NEW "SCORE" FOR THE MAXWELL.

That a matter of twenty youngsters can be accommodated in an automobile was demonstrated recently by Frank J. Griffin, of New York City. Mr. Griffin has several daughters attending school at the Morristown convent, at Morristown, N. J., and recently stopped at that institution with his 1905 model 16-20-horsepower Maxwell touring car. As a score of the youngsters clambered aboard the auto there was nothing to do but give them a ride, and the manner in which such a number managed to stow themselves about the car in one fashion or another in order to participate in the impromptu outing would be a revelation to the body builder who was proud to say its capacity was five passengers. It scarcely needs to be added that the bevy of future misses had the time of their lives while the fun lasted.

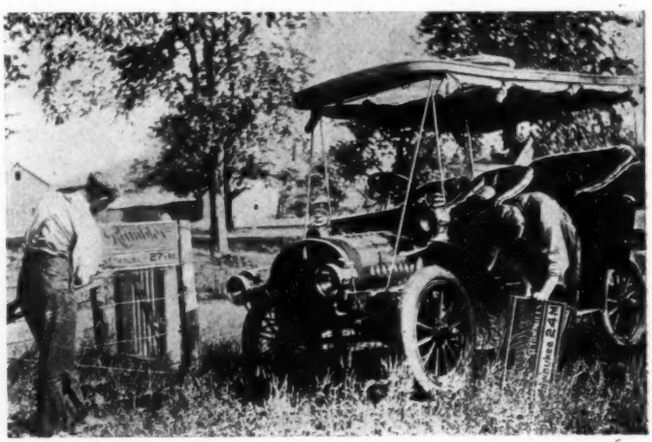
TWENTY LITTLE LADIES WHO ENJOYED A MAXWELL RIDE.

ADDING TO THE LIFE OF AN AUTOMOBILE.

"Much could be added to the life of an automobile and to the satisfaction that it gives to its owners," says J. D. Maxwell, of the Maxwell-Briscoe Motor Company, "if people would bestow upon the automobile but a part of the attention they give to other property. Take, for instance, the item of winter storage. Few people who store their cars for the winter think of taking the trouble to put the car on horses and to remove the tires from the wheels. The insides of the rims, too, should be cleaned and a coat of enamel applied to the inner surfaces where the tire rests. This will prevent corrosion and will leave the rim smooth. A good idea also is to give all polished brass surfaces a coating of heavy oil, slab oil, for instance. A tube of ordinary gum grease, likewise, will preserve the lamps, the radiator, steering post, and other parts that would be injured through corrosion. The top should be opened and cleaned with oiled waste, to keep it smooth and flexible. Of course, these rules find but little application in this section of the country, since we have a rather open winter which permits the use of the automobile practically all the year."

SIGNS ASSIST MUCH IN TOURING.

Much progress in the work of marking the motor highways with Rambler road signs is reported by Thomas B. Jeffery & Company. Twenty-five hundred signs have already been placed



PLACING THE ROAD SIGNS ON THE WISCONSIN ROADS.

by men sent out from the Rambler factory at Kenosha and from the Rambler branches. Twenty-five hundred additional signs are ready to be shipped to Rambler agents for immediate placing. The first lot of signs was used principally in the Middle West. Many were put up between Milwaukee and Chicago. The signs are of sheet steel, durable and can be seen from a distance.

CHICAGO-NEW YORK RECORD HOLDER DEAD.

HARTFORD, CONN., Oct. 28.—After partially recovering from an attack of pleurisy, Burt Holcomb, a former holder of the New York automobile record, died at Southern Pines, N. C., as the result of a general breakdown. Burton Beckwith Holcomb was born in Hartford in 1870; after working some time with the New England Railroad Company, he began testing cars of the Electric Vehicle Company, and four years ago drove a Columbia car from Chicago to New York in seventy hours. Later he lowered the record to 56:38. The interment took place at Hartford.

Woodland, Cal.—The new garage of Van Zoe & Bielar, which was opened in one of the Martinelli stores, on Main street, early last summer, has had a most prosperous season. The concern is the local representative of the makers of the Buick cars, and have equipped their establishment in an up-to-date manner throughout.

LATE AUTUMN DOINGS OF THE AUTO CLUBS

SWAIN WINS BRAZIER CUP WITH "JACK RABBIT."

PHILADELPHIA, Nov. 4.—"Unofficial returns" would seem to indicate the election of Charles J. Swain (Apperson "Jack Rabbit") as next year's holder of the Brazier cup, emblematic of victory in the annual cross-country run of the Automobile Club of Philadelphia, held last Saturday in a driving rainstorm. The reason for the delay in announcing the standing of the eight contestants—the rest were evidently scared off by the ominous front put up by J. Pluvius—is that Mr. Swain failed to follow the route indicated by the official program by using Walnut street instead of Locust street to reach the finish. It may be that he will be additionally penalized, and the order of finish changed.

The conditions of the contest were that the 88.6 miles were to be covered in 5 hours 19 1-2 minutes—neither more nor less—to secure a perfect score. This time represented the maximum in which the course could be covered with due regard to the State, municipal, borough, and village speed ordinances in force. Of course, the contestants were ignorant of this official limit.

Penalties were incurred for being ahead of, as well as for being behind the schedule, and although all the contestants suffered the infliction of demerits, the officials wisely refrained from announcing whether they were imposed for overpunctuality or tardiness. According to the time dope, there should not have been an arrival at the club's quarters at 1409 Walnut street until 1:20 P.M.—the first car started at 8 A.M. sharp—yet at that hour the majority of the contestants were lined up along the curb waiting to officially finish and get in out of the drenching downpour. Here it is reasonable to presume that the penalties inflicted were in most cases for something other than late arrival at checking stations and at the finish. These checking stations were located in three unknown points out in the country, and contestants were penalized for failure to pass them "on the dot." Hence the following "unofficial" list of penalties imposed would seem to be moderate to a degree: Charles J. Swain (Apperson "Jack Rabbit"), 14 1-2; Allan Wood 3d (Ford), 15 1-2; E. L. Miller (Packard), 17; H. P. Bailey (Winton), 18 1-2; C. Yarnall Abbott (Pennsylvania), 23; Dr. W. A. Phreaner (Winton), 23 1-2; Herbert Morris (Stoddard-Dayton), 31 1-2; G. B. Fletcher (Packard), 35 1-2.

The main points on the course were West Chester, Phoenixville, and Norristown, and the roads were selected with a view of giving the contestants a little of all kinds and an object lesson in picking routes to avoid toll-gates.

CHICAGO CLUB EXPECTS THIRTY ENTRIES.

CHICAGO, Nov. 4.—Eleven entries are in hand for the 600-mile three-day reliability run of the Chicago Motor Club, November 26, 27 and 28, reports received from the scouts who went to New York raising the number from three, where it reposed for several days. Harry P. Branstetter was the man who made the "killing," and he yesterday wired Chairman Root of the contest committee that he had received two Dragon and one Wayne entries and that he had received positive assurances that the Pennsylvania, American, Overland, and Marion would forward entries the early part of this week. Eleven others are regarded as good as being in. Counting no chickens as hatched, the contest committee sees at least thirty-two cars. Letters received by Chairman Root show that the makers regard the rules as almost ideal.

LONG ISLANDERS' ANNUAL FALL REUNION.

BROOKLYN, N. Y., Nov. 4.—The entertainment committee of the Long Island Automobile Club announces that the annual fall reunion of the club will take place at the clubhouse on Friday evening, November 8. An excellent bill of advanced vaudeville will be rendered, after which refreshments will be served.

WORCESTER PREPARING FOR ANNUAL BANQUET.

WORCESTER, MASS., Nov. 4.—Thursday evening, November 14, is the day set for the annual banquet of the Worcester Automobile Club, which will be held in the hall connected with the Front street clubrooms. The board of governors is arranging to have the after-dinner speaking assume the form of a symposium of methods of transportation or travel. There will be seven forms of the subject treated by the speakers—aerial travel by one, automobiling by another, and to which Frederick H. Elliott, secretary of the A. A. A., has been asked to respond; steam and electric railways will each have something said for them, the horse will have its innings, so will the bicycle, and there will be suitable consideration for those who, either from preference or necessity, are pedestrians. Last year's banquet was enlivened by clever parodies written by the club's attorney, D. M. Pardee, and there will be some more of them this year.

BERKSHIRE AUTOMOBILE ASSOCIATION FORMED.

PITTSFIELD, MASS., Nov. 4.—Monday, October 28, witnessed the formation of a new club in this city—the Berkshire Automobile Association—with the following board of officers: President, Daniel England; first vice-president, Franklin Weston; second vice-president, Samuel G. Colt; treasurer, R. P. Parker; secretary, S. H. Clapp. The lines on which the club is formed are unique, inasmuch as it will look after the protection of the automobilist and the individual citizen as well in the use of the highways.

As the Berkshires are so tremendously popular with automobilists it will prove welcome news that there is a business organization in this vicinity which will consider it a duty to post highways, unsafe roads, grades, etc., and generally protect and post the transient in his use of the Berkshire roads.

C. A. C. ANNUAL MEETING NOVEMBER 14.

CHICAGO, Nov. 4.—Members of the Chicago Automobile Club will assemble in general meeting for the first time in their new clubhouse, November 14, which is the occasion of the annual meeting and election. The administration ticket as presented by the nominating committee is as follows: For president, Ira M. Cobe; first vice-president, Frank H. Peitsch; second vice-president, T. J. Hyman; secretary, N. H. Van Sicklen; treasurer, Charles E. Gregory; directors, John Farson, Claude Seymour, Walden W. Shaw, T. N. Koehler, A. J. Banta and F. D. Countess.

Several changes in the constitution and by-laws will be given consideration, among which will be a proposition to increase the non-resident membership limit from 100 to 250, and another to extend the resident membership limit. The projected merger of the Chicago Automobile Club and the Chicago Motor Club will also be considered.

A. C. OF MARYLAND ELECTS ITS OFFICERS.

BALTIMORE, Nov. 4.—The annual election of officers of the Automobile Club of Maryland took place recently in their clubrooms, and resulted as follows: President, James Stone; vice-president, Dr. H. F. Rowe; secretary, E. A. Dolle; treasurer, Ernest J. Knabe; board of governors, C. M. Dowe, M. S. Hess, F. W. Coale, F. W. Darling, Roland Morton, and O. Y. Yellott. Following the election of officers a collation was served.

The Automobile Club of Maryland and the Automobile Dealers' Association of Baltimore have announced that the Baltimore show will be held November 16 to 23, in the show building at Maryland and Mount Royal avenues—the scene of the first and most successful show ever held in this city. The exhibition is being arranged by B. B. Johnston, the original promoter, who thoroughly understands the managing of a show.

AERO TROPHY TO GERMAN PILOT.

At a special meeting of the Aero Club of America, last Monday evening, President Cortlandt Field Bishop officially presented the James Gordon Bennett aeronautical cup to Oscar Erbsloeh, pilot of the balloon *Pommern*. According to the deed of gift, the cup will be held by the German Club until the next competition to be held in Germany during 1908.

At the meeting it was announced that the distance covered by the *Pommern*, according to official measurements, was 871.74 miles; Alfred Leblanc and E. W. Mix, who manned the *Isle de France*, were declared to have covered 866.59 miles. The world's long-distance record of 1,196 miles, established in October, 1900, by Comte de la Vaulx, in a trip from Paris to Russia, remains untouched, but the pilots of the *Isle de France* have succeeded in breaking the time record, 41 hours 5 minutes being a record stay in the air. In commemoration of this splendid performance Mr. Bishop declared that he would present a special medal to the French Club. Other awards announced were $2,500 to Oscar Erbsloeh, given by the donator of the cup; $1,000, given to Leblanc by the citizens of St. Louis; $750, to Baron von Abercron; $500, to J. C. McCoy; and $250, to Alan R. Hawley.

GLIDDEN MAKES AERIAL TOUR.

Having qualified as a sky pilot under the most skilled foreign experts, Charles J. Glidden made his first balloon trip in this country last Tuesday, accompanied by Leo Stevens of New York. The ascent was made at Pittsfield, Mass., at 10:45 A.M., and a successful landing made at North Springfield, Vt., at 2:18 in the afternoon. The distance covered was about 140 miles, though on an air line the distance between the two points is only 85 miles. To escape a storm just after they had crossed the Massachusetts line, the balloon had to be sent above the clouds until it reached an altitude of 8,500 feet.

ATWATER-KENT TEST IN PROGRESS AT GARDEN.

With its A. C. A. seal still unbroken, the Atwater-Kent spark generator, which was officially started by Albert W. Jacobi of the A. C. A. show committee on the opening of the Palace show on October 24, is still being run at the Garden. A test is being made of the mileage obtainable from a set of dry cells, and for this purpose an Atwater-Kent spark generator is enclosed in a glass case together with a Jones speedometer-odometer, four spark plugs and six Columbia dry cells. An electric motor furnishes the power to run the apparatus at a rate corresponding to a speed of 25 miles an hour on the road. At the close of the Palace show the odometer recorded 1,700 miles and in the two-day interval between the shows the outfit was kept running at the salesrooms of Harry Houpt, the New York Thomas agent. The reason for the extraordinary mileage obtainable with dry cells in connection with the Atwater-Kent apparatus is due to the fact that the spark generator makes but one spark for each explosion, and this is produced by what may be termed an instantaneous make-and-break contact in the primary, thus minimizing the current consumption, as the contact lasts little, if any, longer than the single contact of the ordinary coil trembler when in action.

LOCATION OF HARRIS OIL CO. EXHIBIT.

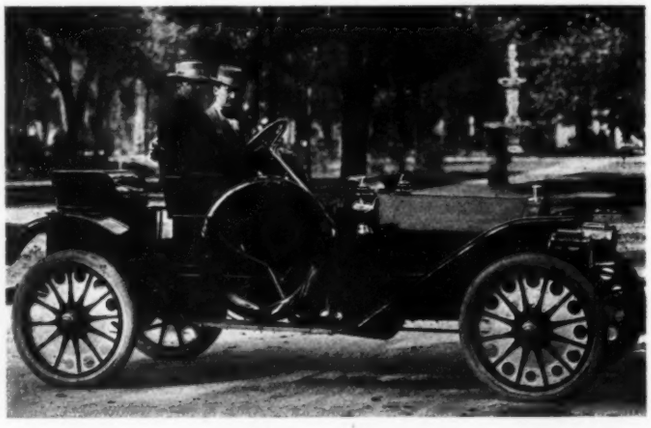
An error in the October 31 issue of THE AUTOMOBILE gave the space of the A. W. Harris Oil Company as No. 256 Balcony, and it is located in No. 256 Basement. Therefore, those who seek this company's lubricants must go below and not aloft.

Laramie, Wyo.—During the past summer Laramie's most ambitious auto establishment has been erected for Elmer Lovejoy and C. W. Brandis at 414-416 Second street. It is a one-story building with basement, floor of concrete with brick sidewalls. and front of iron and glass.

INDESTRUCTIBLE STEEL WHEELS.

Representing the most advanced creation of the metallurgist's art, combined with the highest engineering talent in metal-working, it seems anomalous that the running gear of the automobile should still continue to be made of the same material that characterized the most primitive attempts at wheel-building—wood. Wherever lightness, combined with the maximum of resisting power, has been a desirable feature, wood has almost invariably had to make way for its modern successor—high-grade steel—and in view of the amazing results forthcoming from the scientific handling of this material in automobile construction, it seems odd, to say the least, that its use has not been extended to the art of wheel-making much earlier.

The Indestructible Steel Wheel Company of Chicago, Ill., has been making a wheel of this kind for some time past, aptly named "Indestructible," but the chief objection to its use on pleasure cars has been that of appearance, as the two parts of the wheel were made of stampings in the shape of disks, reinforced by conventional spoke-shaped bosses, which made it resemble a solid wheel, making a car look heavy. This has been overcome in the new pleasure car model, now being exhibited at the Garden and demonstrated on a car outside, by making an open pattern, the disks being perforated between each pair of spokes. This gives it an appearance of lightness more in accord with its actual weight, as the wheel is transparent and resembles the ordinary type when in motion, thus overcoming the only objection to it, and its adoption on American cars as a part of their standard equipment is already under way.



AN INDESTRUCTIBLE STEEL WHEELER THAT MADE LONG TOUR.

President Fish and Vice-President Metzel of the Indestructible Steel Wheel Company, of Chicago, in their Premier Roadster, in which they have just completed a tour of Indiana, Ohio, and Michigan.

LOCO HAS TWO CHASSIS, EIGHT TYPES.

Although the Locomobile Company of America produces eight different models in all, in touring, runabout, limousine and landaulet types, there are but two distinct chassis, a 20-horsepower, known as Type E, and a 40-horsepower, designated Type I. Owing to a mistake in copying, Type I, illustrated in our issue of October 31, was described as 20-horsepower. This was incorrect, the rating of this model, according to the A. L. A. M. formula, being 40 horsepower.

ALFRED REEVES SAILS FOR EUROPE.

Alfred Reeves, general manager of the A. M. C. M. A., accompanied by Howard C. Marmon, of the Nordyke & Marmon Company, sailed Tuesday on the Kronprinz Wilhelm for Europe. A large party gave the pair a royal send-off, and Mr. Reeves was the recipient of a gold watch fob. He makes the trip in the interests of his association and will visit the London, Paris and Berlin shows, being gone in all about six weeks.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

Announcement is made that *The Power Wagon* will hereafter be published in Chicago, with offices in the Metropolitan block. Heretofore the paper has been published in Cleveland.

A handbook of "Hints and Helps on the Operation of the Motor Car" has been issued by the National Carbon Company, Cleveland, O. Ignition troubles are more especially dealt with, and there are a number of hints on the most common mechanical difficulties.

The New York Automobile Trade Association has been advised by the general freight agent of the Hudson steamship line that in the future gasoline motor trucks will be allowed on its piers. This adds one more to the list of transportation lines that realizes the importance of a rapidly-growing industry.

The Schubert Bros. Gear Company, of Oneida, N. Y., is contemplating the formation of large stock company for taking up the manufacture of automobile bodies on an extensive scale. The company, which at the present time employs upwards of one hundred hands, has been very successful in the manufacture of special racing bodies.

In connection with the third annual Automobile and Sportsmen's Exhibition, to be held in Montreal, Que., for one week, April 4-11, the management has entered into an arrangement with the Automobile Club of Canada whereby the show will receive the hearty co-operation of the club. Judging from the large number of applications already received, there is no question but what the show will in every way surpass its predecessors.

Five hundred dollars has been appropriated by the Minneapolis Automobile Club to help the city in paving University avenue, the street which connects St. Paul with Minneapolis. Only one mile of pavement remains to be placed to connect the two cities. The city finds itself unable to appropriate the sum necessary, and the automobile owners have put their shoulder to the wheel, with the result that all travelers on a much used highway will reap the benefit.

Every autoist who has used cuss words because of having to take out different licenses in different States, should lend his support to the congressional bill prepared by the American Automobile Association requiring uniform laws for motor vehicles in all States. The first step toward lending support to the bill is for those who are not members of A. A. A. to join the national body Information about the law and other matters of the organization may be had from Secretary F. H. Elliott, 437 Fifth avenue, New York.

Philip S. Flinn, Arthur Banker, Rob McCurdy, Mr. Austin and three others drove No. 14, the four-cylinder Great Arrow of Mr. Flinn, from Pittsburg to New York in twenty-two hours' running time. The party came to attend the show, and will return in the car. The trip over was rough, for the roads were very bad as compared to their condition at the time of the A. A. A. Tour, when they were reviled by all. The trip was made without incident. The hood was not lifted throughout the trip and the tires were not touched. The car, which seven people occupied in all, has been driven 15,800 miles, and runs perfectly to-day.

In years past most of the imported and other highest-priced cars have been sold in New York and other big cities of the East, but according to recent experience the western cities are increasing their patronage of the highest class of cars remarkably. James Joyce, general manager of the American Locomotive Automobile Company, which has had a show of its Berliet cars in the Waldorf-Astoria for two weeks, says that the number from the West who are taking an interest in high-priced cars, and are willing to pay for them, is astonishing. He says that the visitors from a hundred miles beyond New York made light of all panic talk, and seemed prepared to indulge themselves in the best things to be had, even more freely than usual.

RECENT BUSINESS CHANGES.

Announcement is made that the Rainier Motor Car Company will remove its headquarters in New York City on January 1 from its present location, Broadway and Fiftieth street, to the big corner building at Broadway and Fifty-sixth street, now occupied by the Hol-Tan Company. In the new building the Rainier company will be able to conduct under one roof the business which is now distributed in three buildings. The new quarters contain more than 43,000 square feet of floor space, is five stories high and has a basement.

NEW AGENCIES ESTABLISHED.

M. J. Wolff, proprietor of the Williamsburgh Auto and Storage Company, 159-161 Clymer street, Brooklyn, N. Y., has taken the agency for the Matheson in that borough.

The Henshaw Motor Car Company, of Boston, has been appointed Eastern Massachusetts representative of the Olds Motor Works, and will handle the Oldsmobile exclusively with the Columbus electric. Associated with Manager Henshaw will be A. E. Adams, who has been connected with the Olds Motor Works for a long period.

The Empire Automobile Tire Company, of Trenton, N. J., has opened a branch house in New York City on Seventy-third street, at the juncture of Broadway and Amsterdam avenue, in the building formerly occupied by the Aerocar Company. The branch is under the management of Marcus Allen, who was for several years manager of the Auto Equipment Company, of Detroit. He is a New Yorker, however, and well known in the trade of the metropolitan district. A complete stock of Empire clincher tires and tire accessories has been installed.

NEW AGENCIES FOR YORK.

York, Pa., Nov. 4.—James A. Kline, general manager, and H. R. Averill, sales manager of the York Motor Car Company, upon their return from the Grand Central Palace automobile show, announced the new agencies for the Pullman cars. They are: F. E. Randall Company, Boston; Grout Gasoline Car Company, Providence, R. I.; J. P. Sullivan Company, New London, Conn; Star Motor Car Company, Newark, N. J.; N. A. Barnett & Company, Cranford, N. J.; E. Gibson Company, Indianapolis, Ind.; Thomas & Tolman Auto Co., Washington, D. C.; Allenbyrg Auto Company, Spokane, Wash.; Hernandez Automobile Company, Havana, Cuba; Automobile and Marine Motor Company, Charleston, S. C.

With an order of 100 taximeter cabs, the local firm is considering the advisability of building them. This will necessitate an increase of the factory force and plant.

PERSONAL TRADE MENTION.

H. T. Whittlesey, formerly of John R. Keim Company, of Buffalo, N. Y., is now with A. O. Smith Company, Milwaukee, Wis., traveling in their interests.

Warren T. Walker, formerly with the G & J Tire Company, is now connected with the Locomobile Company as general New England sales representative.

E. A. Sontag, formerly of the Frederick Sontag Company, of Boston, has associated himself with the Empire State Motor Company, of Houston, Tex., as manager.

A. M. Archer, American representative of Hotchkiss et Cie in the United States, sailed, October 31, on the *Baltic* for a four weeks' visit to England and France. He was accompanied by Mrs. Archer.

H. G. Martin, formerly with the Harburg Tire Company, has recently joined the forces of the Republic Rubber Company, of Youngstown, O., and will represent that firm in Brooklyn and Long Island.

C. G. Stowe, formerly New England representative for Speare's oils, has resigned and accepted a similar position with the Columbia Lubricants Company, of New York, which company will open a branch in Boston on or about January 1.

Oscar Warner has severed his connection with Wyckoff, Church & Partridge, of New York City. He has not announced his future connection in the industry, but it is understood he will be prominently identified with one of the large manufacturers.

W. J. Lamb has been appointed manager of the New York branch of the Fisk Rubber Company, at 1725 Broadway. Mr. Fisk has been an exponent of Fisk tires for the past six or seven years in and about Detroit, where he was manager of the local branch house.

Col. Charles Arthur Carlisle, purchasing agent for the Studebaker Automobile Company, of South Bend, Ind., has completed a very enjoyable trip with his family, in his Studebaker "30" car, through New York State, Connecticut, Massachusetts, Vermont, and New Hampshire.

E. W. Heddington has been appointed manager of the New York branch of the Haynes Automobile Company, to succeed C. B. Warren, who has been appointed sales manager for the company, with headquarters at the factory at Kokomo, Ind. Mr. Heddington has been associated with the New York branch for two years, the past year as Mr. Warren's assistant.

The Firestone Tire and Rubber Company, of Akron, O., has transferred J. V. Mowe to its Chicago branch, where he will look after the sale of the Firestone tires in the Chicago territory in the future. Mr. Mowe has been connected with the Philadelphia branch of the Firestone company during the past year. E. M. Eldridge, of Seattle, Wash., has joined the selling forces of the Firestone in New York City.

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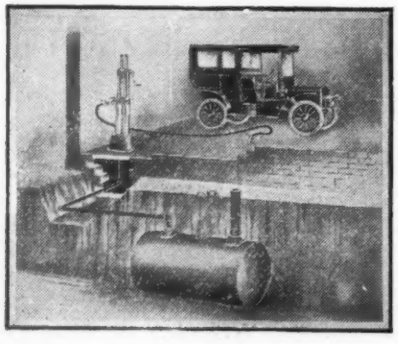

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